THE DENTAL Digest

IN THIS ISSUE:

AUGUST 1943

A simplified system for matching tooth colors...

COLOR SATURATIONS INTENSIFIED FOR EASIER PERCEPTION

The Veri-Chrome Color Guide "Selector" System offers the dentist an accurate, simple system for expertly selecting tooth colors

"All teeth are basically yellow (pigment) in color. Some are tinged or modified with red (pigment)."

This simplified Veri-chrome system divides the full range of basic colors that appear in human teeth (yellow and red) into five progressive saturations (see chart). The saturations are numbered in order on the Veri-chrome Color Guide. Occasional teeth with blueish cast are classified in Veri-chrome colors as B1 and B2.

Any human tooth can be accurately matched to one of the color on the Veri-chrome "Selector" Color Guide.

The system is extremely simple. If the tooth is dominantly yellow, compare it to Y3. If the natural tooth appears darker (more saturated), it will match either Y4 or Y5. Should the natural tooth appear lighter (less saturated) than Y3, it will match either Y1 or Y2. The same simple, accurate procedure is used for the "R" (red) series.

Veri-Chrome natural tooth colors have controlled color brilliance.

Veri-chrome

tooth colors now available in

FIVE-PHASE ANTERIORS DR. FRENCH'S POSTERIORS *(new carvings)*
NUFORM ANTERIORS AND POSTERIORS
NUFORM TUBE TEETH ANTERIORS AND POSTERIORS

UNIVERSAL DENTAL COMPANY • 48TH AT BROWN STREET • PHILA., PA.

THE DENTAL Digest

VOL. 49 NO. 8

AUGUST 1943

EDWARD J. RYAN, B.S., D.D.S., *Editor*
ETHEL H. DAVIS, A.B., *Assistant Editor*
708 *Church Street, Evanston, Illinois*

LIEUTENANT COMMANDER ELLIS G. BOVIK, D.C., USNR, was graduated from Northwestern University Dental School in 1927 and received his M.S.D. in 1932. As a civilian, Commander Bovik was in general practice and taught oral surgery as an assistant professor on the staff of Northwestern. In February, 1935, he wrote for us on THE HEALING OF CYSTS FOLLOWING THE PARTSCH OR OPEN OPERATION. His present article on SIMPLIFIED ACRYLIC BRIDGEWORK indicates the complete and high quality dentistry that is given to the men in service when there is the time and there are the facilities for doing so.

LESTER EARL MYERS, D.D.S. (Creighton University, 1914) is in general practice but has a special interest in gold foil restorations both in practice and as instructor of gold foil in the College of Dentistry, University of Nebraska, where he is also an assistant professor in operative dentistry.

About Our CONTRIBUTORS

CHESTER J. HENSCHEL, D.D.S., is a graduate of the New York University College of Dentistry, June, 1929. In July, 1941, Doctor Henschel published here his theory of PAIN CONTROL THROUGH HEAT CONTROL. In October of the same year he followed with PAIN CONTROL BY COLD CONTROL. His present article on THE CLAMP SALIVA EJECTOR is designed to maintain a clear, unobstructed field in operative dentistry without the use of a rubber dam.

RODERICK M. MORANGE, D.D.S. (Northwestern University Dental School, 1908), a general practitioner, in August, 1942, described A NEW PERMANENT DENTURE LINER FOR ACRYLIC DENTURES in these pages. Now Doctor Morange clarifies for practical application a method for balanced functional occlusion which was developed by Fred S. Meyer of Minneapolis.

MAJOR WILLIAM F. TOLAR, D.C., Army of the United States is chief of prosthetic service at Fort Bliss and his co-author, MAJOR WILLIAMS A. FERGUSON, D.C., Army of the United States is chief of the Dental Clinic No. 2 at Fort Bliss, Station Hospital. Major Tolar received his D.D.S. in 1928 at the University of Illinois. Major Ferguson has his B.S. from East Texas State Teachers' College (1936) and his D.D.S. from Baylor College of Dentistry (1936) and taught high school science for three years.

JOHN W. NYSTUEN, B.Sc.D., D.D.S. (Northwestern University, 1934), B.S. (University of Saskatchewan, 1930) is in general practice.

Simplified Acrylic Bridgework*

LIEUTENANT COMMANDER ELLIS G. BOVIK, Dental Corps, U.S.N.R., Corpus Christi, Texas

DIGEST

The object of this paper is to present a timely and extremely simple and practical technique for the production of fixed acrylic bridgework. The same technique may be applied to the construction of jacket crowns, individual teeth for partial dentures, and complete sets for full dentures.

IT HAS BEEN my unusual good fortune since I have been on active duty in the Navy to be stationed where I have had the opportunity to produce many anterior fixed bridges. These bridges have been made with porcelain-gold pontics and also with acrylic pontics. During the last several months I have constructed almost exclusively the acrylic type of pontic. The acrylic pontic can be made in approximately half the time that is required to produce a porcelain-cast gold pontic and at a small fraction of the cost. Esthetically, the acrylic tooth equals if not exceeds the porcelain. So far as strength is concerned, I am of the opinion that the acrylic pontic when properly reinforced with gold is superior to the porcelain-gold pontic.

As I see it, the acrylic bridge must necessarily be reinforced with gold. We must not expect too much from this material, and failures no doubt occur when a suitable metal framework is not properly constructed.

One of the objections that has been raised to the acrylic type of bridgework has been the necessity to carve in wax the tooth forms to be reproduced in the plastic material. The technique presented here reduces carving to the lingual anatomy, and the most unskillful carver is able to produce perfectly formed and anatomically correct pontics. It is so simple that the

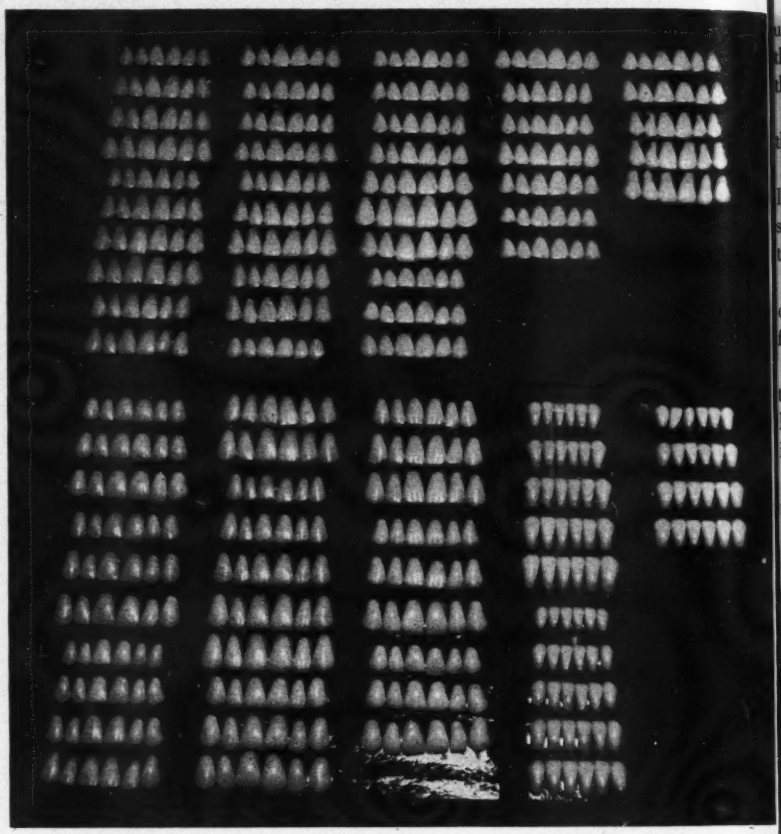


Fig. 1—Standard porcelain mold guide.
Fig. 2—Porcelain facings from mold guide waxed to ridge. Plaster matrix below, separated from teeth and model.

*This article has been released for publication by the Bureau of Medicine and Surgery of the U. S. Navy. The opinions and views set forth are those of the writer and are not to be considered as necessarily reflecting the policies of the Navy Department.

carving can be accomplished by an unskilled laboratory assistant if necessary.

Technique

Let us consider a typical six-tooth upper anterior fixed bridge, in which three-quarter crowns will be utilized on the two cuspids for abutments.

1. Finish the three-quarter crowns in the mouth.

2. Take a pink wax bite impression. If carefully done, this wax bite impression may also be utilized to produce the lower cast.

3. Take a plaster of Paris impression of the upper anterior teeth with the finished crowns in position.

4. Make a cast of the lower teeth in the bite impression with artificial stone. Do not separate, but retain this wax as it is used to articulate the models.

5. Box in the plaster impression with moldine.

6. Paint the cavity sides of the crowns with gold rouge dissolved in chloroform, so that they may be removed from the metal model after pouring.

7. Make a model of the plaster impression in Melotte's metal. When cool, remove the crowns several times from the metal model to facilitate their removal.

8. Articulate the metal model with the opposing teeth on a bridge articulator by means of the stone cast and wax bite impression previously described.

9. With a large bur make the necessary reliefs on the metal model, just as they would be made to receive porcelain teeth.

10. From any standard porcelain mold guide, select four incisors that will fit the case (Fig. 1).

11. Set the four porcelain incisors in position on the model. Instead of grinding the "mold guide teeth" where one would to fit the ridge, add soft wax to fill in these discrepancies. There is no objection to grinding the porcelain teeth slightly; this does not spoil them for future use, as soft wax may

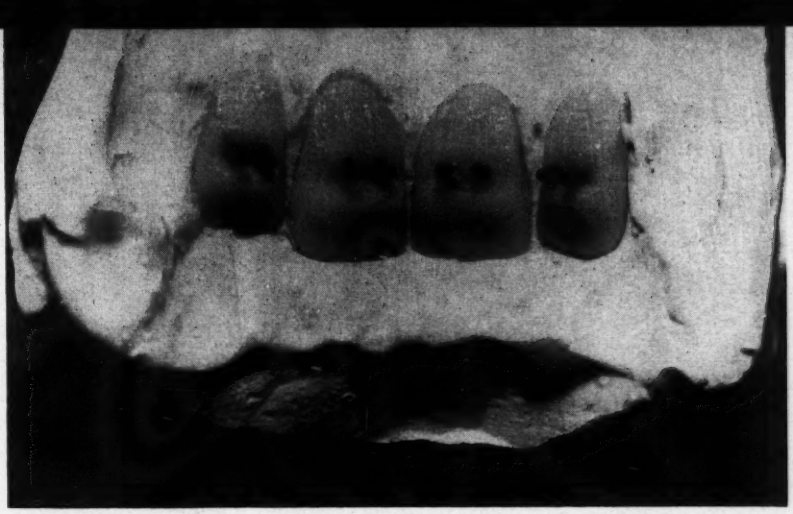


Fig. 3

Fig. 4↑

Fig. 5↓

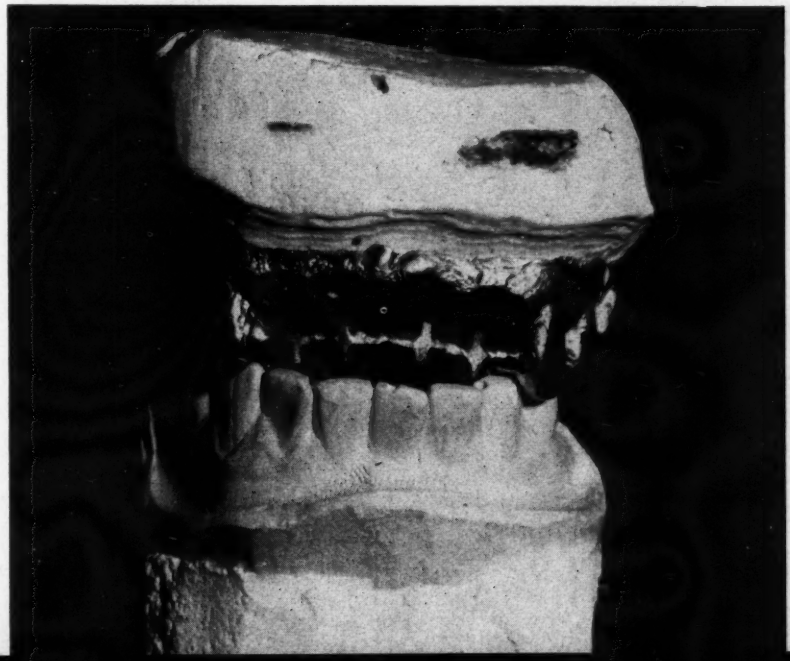


Fig. 3—Mold guide teeth in plaster matrix.
Fig. 4—Plaster matrix.
Fig. 5—Three-quarter crown and gold reinforcement bar in place on the articulator.

Fig. 6—Three-quarter crowns and gold reinforcement bar in position in the mouth.

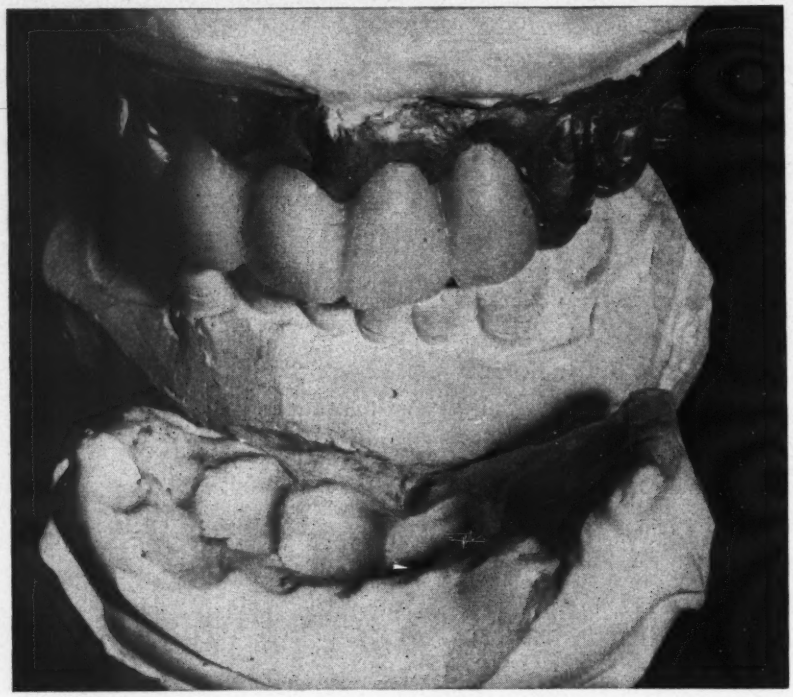


Fig. 7—Labial view of pontics in ivory colored wax. Note plaster matrix used to form labial anatomy.

Fig. 8—Lingual view of pontics in ivory colored inlay wax. Note plaster matrix used to form labial anatomy.

always be added to fill in the spots ground (Fig. 2).

12. When satisfied with the esthetics and the clearance of the bite, lubricate the labial surfaces of the porcelain teeth and the metal model and make a plaster matrix with a creamy mix of plaster. Guard against the production of air bubbles. This matrix, after separation from the porcelain teeth, is shown in Fig. 2.

13. Remove the plaster matrix, lay it aside, and replace the porcelain teeth back in the mold guide (Figs. 3 and 4). The metal reinforcement may now be constructed.

14. Clasp metal wire, 12 or 14 gauge with 18 gauge cross wires may be used; the gold reinforcement may be cast in one piece. I shall describe the wire or bar method first.

Wire or Bar Method—Bend a piece of 12 or 14 gauge clasp metal wire, or lingual bar metal, to follow the ridge and cut it to the proper length to reach from one abutment to the other. A approximately the midline of ea pontic, solder a cross wire of 16 or 1 gauge which will be parallel to the lo axis of the pontic. This soldering c easily be accomplished over the op flame without investing. When the cross wires have been soldered, attac the main wire or bar to the abutments with sticky wax, and remove the two abutments and the connecting bar in one piece. Invest in soldering investment, being careful to cover the cross wire solder joints. Solder the reinforcement bar to the two abutments.

Cast Method—I use ready-made wax wire forms. Select a gauge that will allow for the bite and a thickness of acrylic. Bend the wax to follow the ridge and attach to each abutment with a warm instrument. Next take 16 or 18 gauge wax wires and attach to the main bar in the midline of each pontic, so that the wires will be parallel to the long axis of the finished acrylic pontic. Remove the wax pattern, invest and cast with a reliable hard gold. When cast, attach to the two abutments with sticky wax, remove with the crowns, and invest in soldering investment. Solder the bar to the two abutments.

15. The final polishing of the three-quarter crowns is done.

16. Place the gold framework on the articulator, making certain that there is clearance for the bite. The crowns and bar may be tried in the mouth (Figs. 5 and 6).

17. Lubricate the plaster matrix that was made from the porcelain mold guide teeth (Figs. 2 and 4), and place in position on the labial aspect of the metal model. Also lubricate the metal model on the ridge.

18. With the matrix in position, flow ivory colored inlay wax into the matrix and over the gold reinforcement, completely covering the latter. With a wax carver form the lingual surfaces of the pontics (Figs. 7 and 8).

19. Remove the lubricated plaster matrix. The bridge is now completely carved, as the matrix forms the labial surfaces, which is the most difficult to carve.

At this time I generally try the bridge in the mouth and take another check of the shade. A try-in at this point gives the operator an opportunity to see how the finished bridge will appear in the mouth (Fig. 9).

20. When satisfied with the esthetics and the bite clearance, invest in stone in a vulcanizing flask with the labial surfaces of the pontics exposed in the lower half of the flask (Fig. 10).

21. Apply separating medium and fill the upper half of the flask with stone, vibrating to prevent production of air bubbles.

22. When the stone has hardened, separate the two halves of the flask and boil out the wax. Allow the flask to cool to room temperature.

23. Apply sodium silicate solution to the depressions in the lower half of the flask, being careful not to get the liquid on the gold. This solution acts as a sealer and keeps the acrylic resin from working into the stone and facilitates removal of the bridge when processed.

24. Tin-foil the labial or upper side of the flask (Fig. 11).

25. Mix the acrylic resin according to the direction of the manufacturer and pack into the lower half of the flask. Place a piece of wet cellophane between the two halves of the flask and press in a flask press. The material used is known as vitacrilic and is supplied with the "new hue" shades already mixed (Fig. 12).

Fig. 9—Bridge waxed in place.

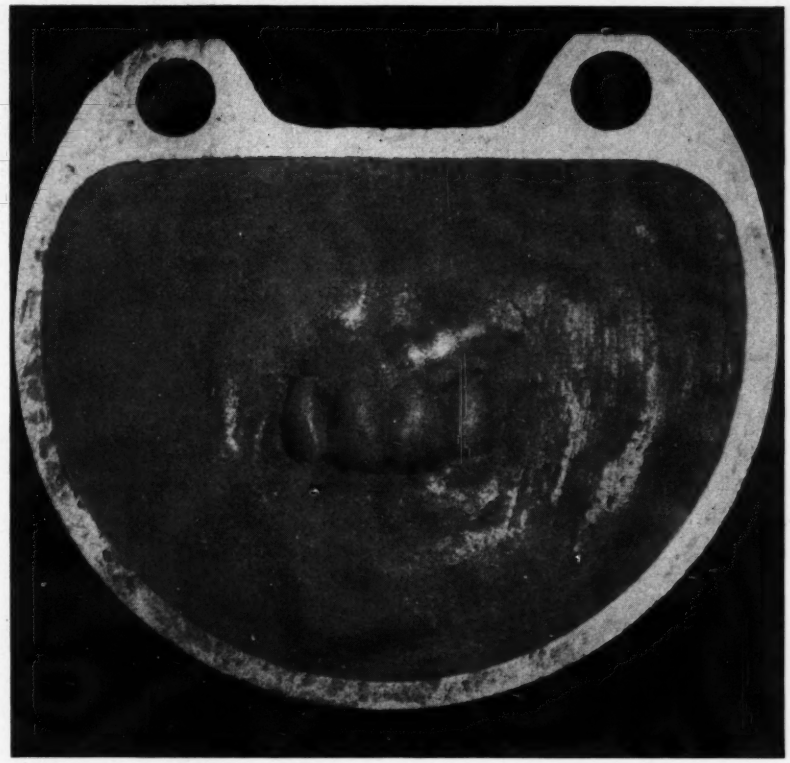


Fig. 10—Bridge invested in artificial stone in the lower half of flask. Labial surfaces of pontics exposed.

26. Separate, add more material if necessary, press again, and inspect.

27. Add incisal translucency if desired by removing a thin layer of material with a hot sharp knife (Fig. 13).

28. Cure the material as suggested by the manufacturer; bench-cool, and then immerse in cold water. When thoroughly cold, remove the bridge from the investment.

29. If the stone adheres to the bridge, dissolve by soaking in a saturated solution of sodium citrate.

30. Finish the pontics with fine pumice and a wet brush wheel. For the final polish, use wet whiting on a soft hair brush wheel.

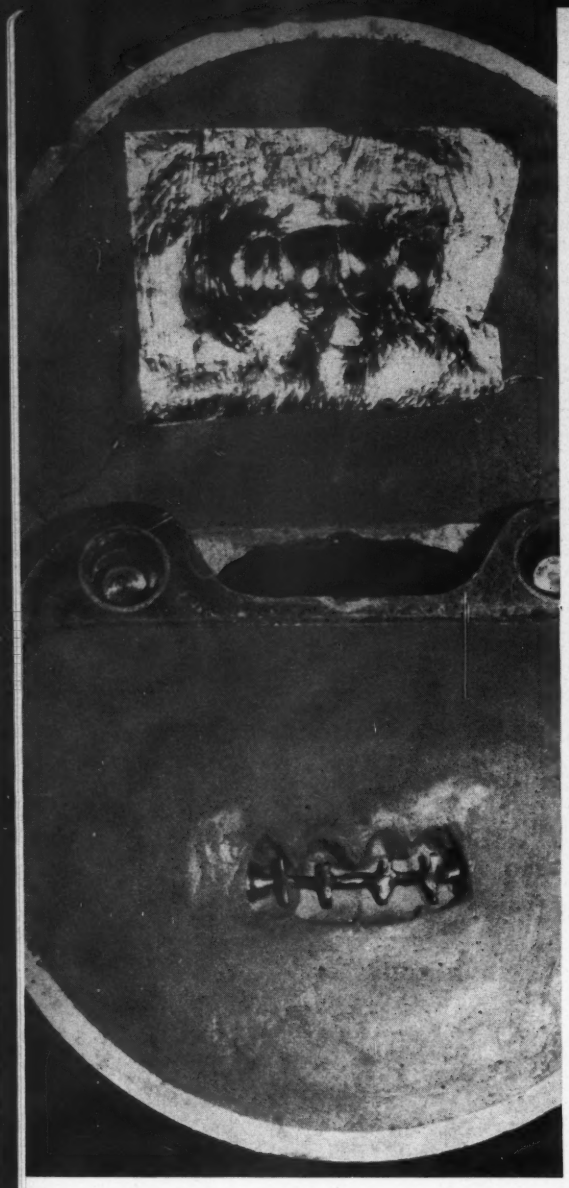


Fig. 11

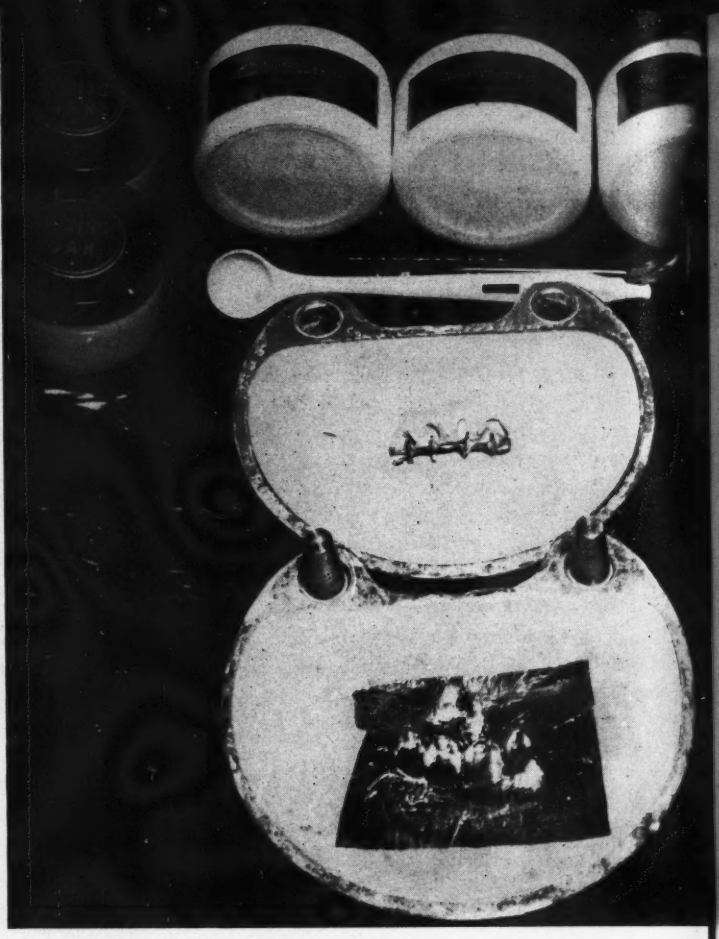


Fig. 12

Fig. 13

Fig. 14

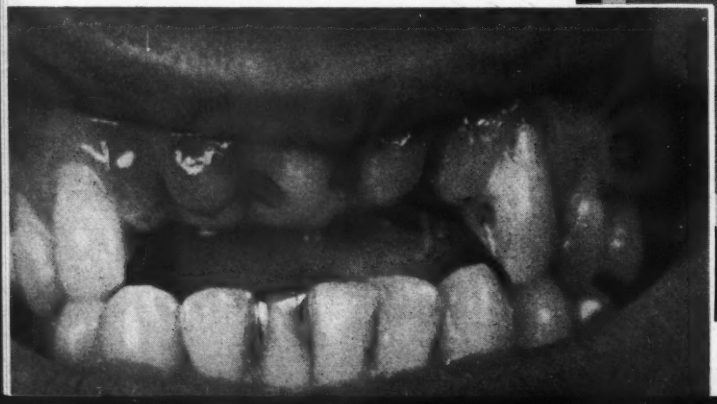


Fig. 11—Labial surfaces of pontics tin-foiled. Lingual surfaces with gold framework in lower half of flask.

Fig. 12—Materials and instruments.

Fig. 13—Shaving off incisal edge to increase incisal translucency.

Fig. 14—Before insertion of bridge.

Fig. 15—Finished bridge in place.

Fig. 16—Closeup of another finished bridge in place and appearance of patient with bridge in mouth.

Adaptation of Method to Partial Dentures

I have also utilized this method in producing teeth for partial dentures, as it is readily possible to copy any tooth on any porcelain mold guide:

1. Cover the pins in the porcelain teeth with soft wax and invest them in a flask with the labial surfaces exposed.
2. When both sides of the flask have been filled and hardened, remove the porcelain teeth from the mold.
3. Pack these individual teeth in the manner described and grind them into the case as with porcelain teeth.

Posterior teeth may be reproduced likewise as it is not necessary to have a diatoric acrylic tooth.

Acrylic teeth are definitely indicated in close-bite partial denture cases.

Comments

Great claims for acrylic bridgework are not made. The plastic materials are not yet ready to displace porcelain. Acrylic bridges, however, are extremely simple to construct. Esthetically they are exceeded only by natural teeth.

To date there have been no breakages in my experience.

U. S. Naval Hospital.

We Can't Pay You, But—

No dental author can ever be *paid* for a valuable technical or scientific article. The value of such material is above a monetary basis. In the preparation of a technical article, however, an author often expends money for drawings, photographs, models, or graphs. We would like to help defray some of these expenses.

Until further notice, THE DENTAL DIGEST *will allow* $25.00 *toward the cost of illustrations provided by the author of every article accepted for publication.*

Before the year is out about 20,000 of our dental colleagues will be in military service. Few of them will have the time, the facilities, or the opportunities to develop new techniques or to write for the dental literature. They will be eager, however, to read of the new developments in dental science and art.

Writing articles for publication in technical journals can be a contribution to the war effort, because that is how to help our dental officers in the Army and Navy keep abreast of technical advancements, and it is one way to improve the skill and services of civilian dentists on the home front.

If you have a constructive idea, an innovation, a new result of tried and proved experiment, put it down in writing, illustrate it, and send the material to: The Editor of THE DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

We hope that you will accept this invitation!

Class III Gold Foil Restoration

LESTER EARL MYERS, D.D.S., Omaha

DIGEST

In wartime less emphasis is placed on methods of tooth preservation because of the immediate urgency for surgery and prosthetics. To keep before the profession the desirability of attention to tooth preservation, a technique is presented for producing the long-term benefit of a gold foil restoration.

Early treatment of the cavity and the use of rubber dam are prerequisites in gold foil restoration. The Hollenback condenser is especially helpful to the dentist without an assistant.

The technique outlined and illustrated is that developed by Charles E. Woodbury.

IN TIMES OF war it is natural that dentistry should stress surgery and surgical procedures. The preservation of teeth has become secondary for the duration. This is shown by the curriculum in the schools and the predominant subjects on our dental society programs. Surgery and prosthetics receive prominent attention and little is said of the methods and types of procedures for saving the teeth. It is with the hope of keeping the profession aware of the long-term benefit in saving a tooth rather than replacing it after it is lost that I present a technique for producing a well-made gold foil restoration.

Doctor Charles E. Woodbury of Council Bluffs, Iowa, about thirty years ago, said to me: "There is nothing so good as a good gold foil filling and nothing so poor as a poor one." One of the greatest recent contributions to the making of good gold foil restorations is the Hollenback condenser. Since its appearance on the market more interest is being shown in gold foil restorations, with improved results. It enables dentists without assistants to condense gold foil well and also enables the more energetic, by the use of the contra-angle, actually to construct good class III restorations, which cannot be seen from the labial surface, without sacrificing extension for prevention.

To make a gold foil filling from the lingual approach is a subject in itself and will not be dealt with here. The technique for a class III gold foil as developed by Doctor Woodbury and as taught in the dental department of the University of Nebraska will be described.

Technique

One of the prime factors for a good gold foil operation is early treatment of a cavity, when there is the least possible destruction of tooth substance. Proper application of the rubber dam is likewise a requirement for gold foil restorations. After the rubber dam is in place, it is well to take a few minutes to study the tooth and draw mental blueprints of the operation. One should have a clear mental picture of the cavity and completed restoration before the tooth is opened.

It is seldom that a cavity cannot be entered by the corner of a sharp thin-bladed Widelstaedt chisel, so that a series of small bites can be taken until the cavity is open large enough to permit the entrance of a small bur.

Cavity Outline (*Fig.* 1)—1. Enter the tooth rather abruptly on the labial surface just incisal to the contact point at a rather sharp angle, and proceed with a long graceful curve, almost parallel to the long axis of the developmental lobes, to meet the gingival wall at a point about 1.5 mm. inside the labial-axial line angle.

2. The lingual margin follows the outline of the labial closely but may be extended to permit ease of access. About the only difference between the labial and lingual surface is that the linguo-gingival margins should be on or just inside the linguo-axial line angle.

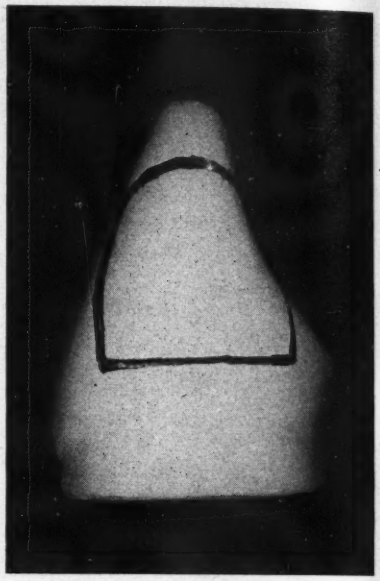


Fig. 1—Outline of cavity.

Fig. 2—Inside of cavity showing retention points.

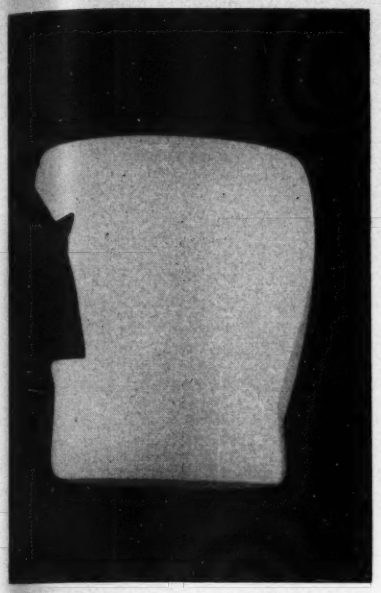


Fig. 3—"Bump" under incisal retention.

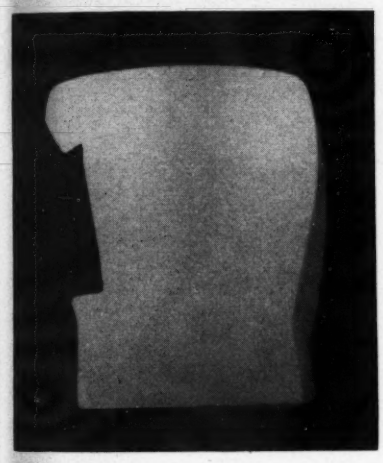


Fig. 4—Inside of cavity after "bump" is removed with a number 2 bur.

3. Both surfaces must have all unsupported enamel removed, otherwise they will separate during malleting and a "leaky filling" will be the result.

4. The gingival wall is placed just under the free margin of the gum tissue or at the junction of the concavo-convex surface; it meets the labial and lingual margins at definite angles, and the axial wall, at a right angle.

Inside of Cavity (*Fig.* 2)—1. The inside of the cavity is made a concavity with a number 2 round bur.

2. The convenience or retention points are made by bisecting the linguo-gingival-axial angle with a number 000 or ½ round bur entering from the labial and at a point about 1 mm. inside the linguo-axial angle. The point should be from .25 mm. to .5 mm. in depth or the depth of the head of the bur.

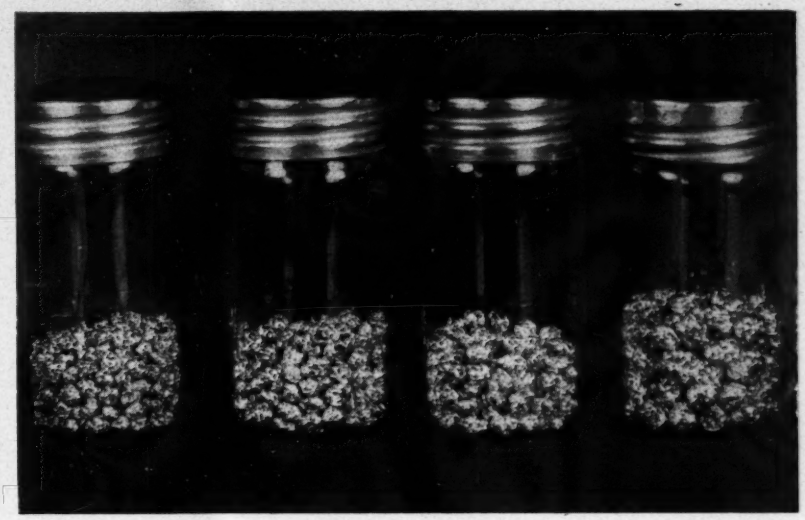


Fig. 5—Hand-rolled gold in the various sizes: 1/64; 1/48; 1/32; 1/16.

3. The labial retention point is made by the same procedure, the cavity being entered from the lingual with a contra-angle and the labio-gingival-axial angle being bisected.

4. The incisal retention point is made with a 33½ inverted cone bur in the straight handpiece, entered from the labial. The cone bur is held, in so far as the approximate tooth will allow, at right angles to the long axis of the tooth, and sunk to the depth of the head of the bur with a labial and incisal inclination and not too far incisally.

5. These point angles are all sharpened with number 8 and number 9 angle formers, starting about 1 mm. incisally from the gingival wall and cut into the bottom of the point made by the bur. With the same chisel start about half way across the gingival wall and with successive cuts on the lingual and gingival, form a definite angle; do the same with the labial-gingival angle, entering from the lingual, and be sure the gingival wall is flattened so as to meet the axial wall at a definite right angle. It is also well to sharpen the incisal angle.

6. The cavity now has a slight ridge just gingival to the incisal retention, obstructing the entrance of the incisal point angle (Fig. 3). With a number 2 bur, entering the cavity from the labial, remove this bump and at the same

Fig. 6—Placement of gold begun in linguo-gingival retention.

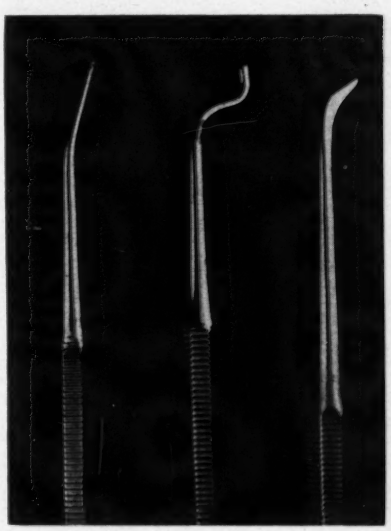


Fig. 7—Plugger points, numbers 1, 7, and 9.

Fig. 8—Bar completed between labio-gingival and linguo-gingival retention.

Fig. 10—Condition of filling when the incisal retention should be filled.

Fig. 9—Position of gold when the linguo-gingival angle is covered.

Fig. 11—Incisal retention filled.

time remove the sharp angle at the inside of the labial wall, thereby opening the incisal retention so that it will be readily accessible (Fig. 4).

Beveling and Toilet—The margins are now beveled slightly, the toilet of the cavity is made, and the cavity is ready for the gold.

Placing and Building of Gold—1. With number 64 pellets (containing 1/64 of a sheet) of gold (Fig. 5) the restoration is started by placing an annealed pellet in the linguo-gingival angle (Fig. 6) where it is held in place with a holding instrument and thoroughly condensed with a number 1 round plugger point (Fig. 7). This should be continued until the bar (Fig. 8) is built, the gold being held all the while with the instrument until completely anchored in the labial-gingival angle. The number 7, or bayonet plugger, should be used to condense the gold in the labial-gingival angle. The holding instrument may now be released and the gold tested to see if it is thoroughly anchored.

2. Continue to build the gold, using a number 9 or foot plugger and using number 48th or 32nd pellets of gold. Be sure to carry the gold through the cavity and cover the linguo-gingival angle as in Fig. 9.

3. Condense two pellets from the labial, and then with the same plugger, condense from the lingual over the linguo-gingival angle. If the access cannot be reached by number 9, use number 10 foot plugger, but do not fail to cover and condense the gold at this point or a "leaky filling" will be the result. This procedure of applying two pellets from the labial and then condensing over the lingual must be con-

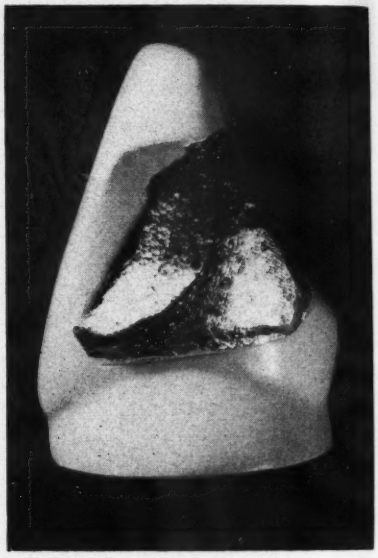


Fig. 12—Linguo-incisal wall covered. This must be covered at this time if filled at all.

Fig. 13—Incisal wall covered.

Fig. 14—Condition of gold when filling is over-built to force the contact.

Fig. 15—Over-filled cavity ready for finishing and polishing.

tinued until the entire lingual wall is covered. The gold is kept in a slight concavity so as not to cause a blocking off from the lingual, and to keep the surface of the gold smooth.

4. When the lingual wall is about two-thirds covered, as in Fig. 10, the incisal retention point is filled (Fig. 11), again with the use of the bayonet plugger.

5. Continuing as before and being sure to carry the gold through from the labial to cover the lingual-incisal wall and condense each pellet from both labial and lingual, build as in Fig. 12.

6. It is permissible, if the access is limited at this point, to flatten the pellet between the thumb and forefinger, after it has been picked up by the carrier and before annealing, so as more easily to carry through the labial-incisal wall. The incisal wall is covered as in Fig. 13.

It will be noted that the gold is still in concave form and that the labiogingival angle is still uncovered. It will easily be seen that by building too fast from the labial the lingual portion cannot be reached properly.

7. The same procedure is followed, and at this point in building the gold, the point of the number 9 plugger is directed toward the lingual; pressure is directed toward the lingual while condensing; the contact is built, separation being forced as in Fig. 14.

8. The labial is filled to excess as in Fig. 15.

Finishing—1. The gingival margin should first be dressed with knives, files, and strips.

2. The labial is dressed to the margin with knife and discs, and the lingual margin with small stones and discs.

3. The separator is adjusted, and slight mechanical separation obtained to finish contact and dress filling to form. Gold foils in anterior teeth should always be finished to the original contour of the tooth.

4. The final polish is done with flour of pumice and chalk on brush and rubber cups. Fig. 16 shows labial view of finished filling.

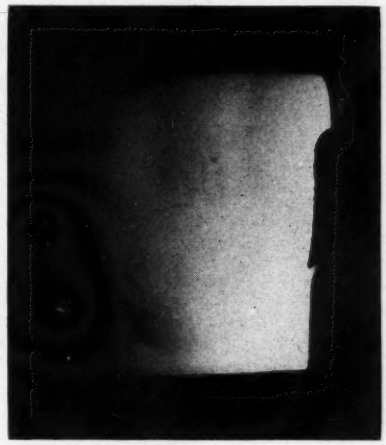


Fig. 16—Labial view of finished restoration.

1229 *Medical Arts Building.*

Dentistry in the Armed Forces and in Government Agencies

[Condensed from Association Activities, J. A. D. A. 30:1291 (August 1) 1943.]

"The Committee on Legislation has been receiving many communications from all over the United States for some time urging that some definite action be taken to secure more direct authority for the Dental Corps in the various services. It is apparent to all who have studied these matters that there is a definite need for direct approach from the different dental installations through the Dental Corps direct to the chief of the administrative office. There certainly should be a more direct approach for dentistry, with more authority for the Dental Corps in the handling of equipment and supplies and with regard to the promotion of its officers. Such an approach would mean saving of time and money and provide a more efficient Dental Corps. . . .

"Since the demand for a separate Dental Corps is growing very fast, one can foresee that immediately after the war there will crystallize a sentiment for legislation to this effect, and to free dentistry from medical domination. It is felt by many in the American Dental Association who have studied the problem that a complete separation of the Dental Corps from the Medical Corps would hinder the effectiveness of both corps, but the Committee on Legislation is definitely of the opinion that problems of con-

(*Continued on page* 368)

The Clamp Saliva Ejector

CHESTER J. HENSCHEL, D.D.S., New York City

DIGEST

A clear, unobstructed field is important in precise operative dentistry. In treating posterior mandibular teeth, such an unobstructed field is prevented by the usual collection of saliva, mucin, water, and débris. Although in such cases the use of rubber dam seems the obvious solution, its use becomes impracticable with the modern thermal control technique for revolving dental instruments. A clamp saliva ejector is described to be used instead of the rubber dam.

IN FORMER DAYS we were content to "drill" teeth dry, laboriously, painfully, and with obvious thermal trauma. Beginning in the days of Hoffschneider, and now more widely, thousands of us are learning to use the fluid stream for thermal control during cavity preparation. This is a fine 100° F. stream of water directed upon the cutting blades or surface of revolving steel burs and carborundum or diamond stones.[1] This fluid stream technique must not be confused with the use of damp or moist burs and stones. Although a dry bur cuts better than a damp one, it is definitely inferior to one bathed by a constant flow of warm water. With thermal control, operative speed is increased, accuracy is improved, thermal trauma is completely prevented, the life of cutting instruments is prolonged, and the need for anesthesia is appreciably diminished.

We who have employed this modern operative dentistry have been converted to its use away from the rubber dam which has been discarded during actual cavity preparation. If it is necessary, the rubber dam is still used for observation and restoration. To replace the rubber dam I have developed the clamp-ejector or retractor-ejector as a device affording wide application. It has been used extensively for four years and has stood the test of time.

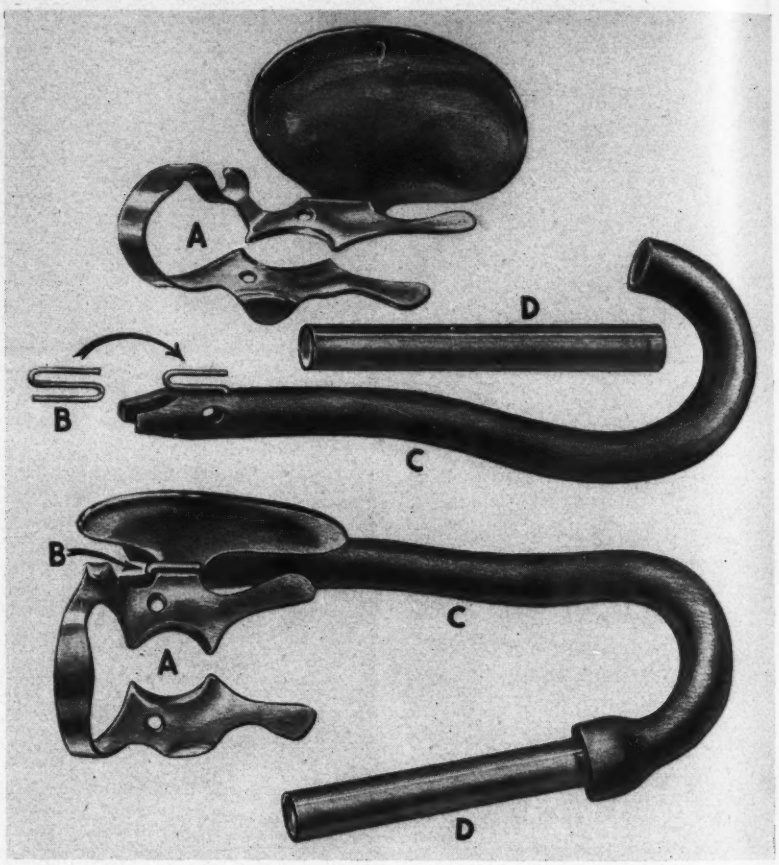


Fig. 1—Component parts and assembled clamp saliva ejector. A, Retractor clamp, Ivory numbers 45 and 46 (right and left molar). B, S-hook to attach rubber tubing to clamp. Use 1¼ inch 0.024 stainless round wire (or paper clip) and bend to shape. C, Rubber tubing, 6 inches long; one-fourth inch diameter, with one end notched and perforated, the other end fitted over glass tube, D, for attachment to saliva ejector. To notch oral end, pinch rubber tubing flat and with scissors cut off both corners. Bend tubing double, one-half inch from end, and pinch flat. Cut off both corners, leaving two holes. The S-hook may be caught into one of these holes or it may be thrust into the wall of tubing itself as illustrated. D, Glass or metal tubing, 2 inches long and one-fourth inch in diameter (to fit dental unit saliva ejector holder).

Use and Advantages of Clamp Saliva Ejector

The device is simple and is assembled outside the mouth. It offers many advantages over the ordinary saliva ejector for posterior mandibular treatment. Ejection occurs posterior and inferior to the site of operation and rarely allows saliva to collect in the throat. The retractor clamp keeps the tongue well away and creates a free space beneath for the open end of the rubber tubing and so prevents the sucking in of tissue, or clogging. Should this occur, it may be freed by a gentle pull on the tubing.

Although the retractor-ejector was designed for the purpose mentioned, it has often been used while packing

[1]Henschel, C. J.: Pain Control by Heat Control, *Dental Digest*, 47:294 (July) 1941.

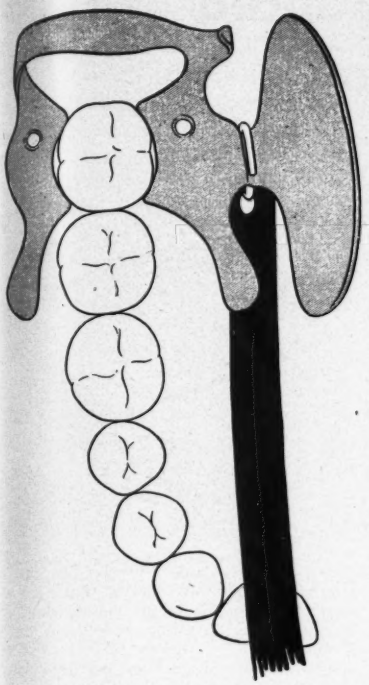


Fig. 2—Clamp saliva ejector assembled and in place for treatment of bicuspids or molars. It is best placed one tooth posterior to site of operation.

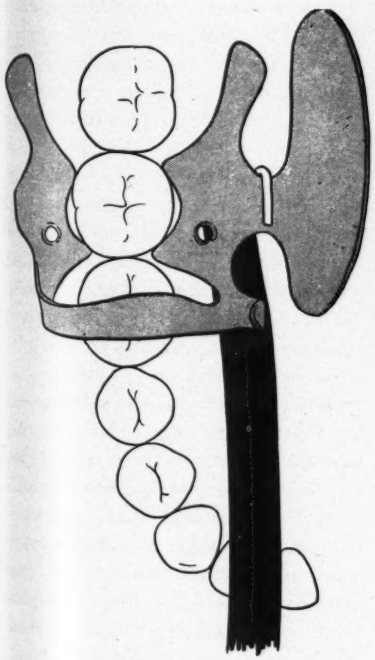


Fig. 3—Reversed clamp for treatment of third molar when the clamping of that tooth is undesirable. Left retractor clamp is used on right side.

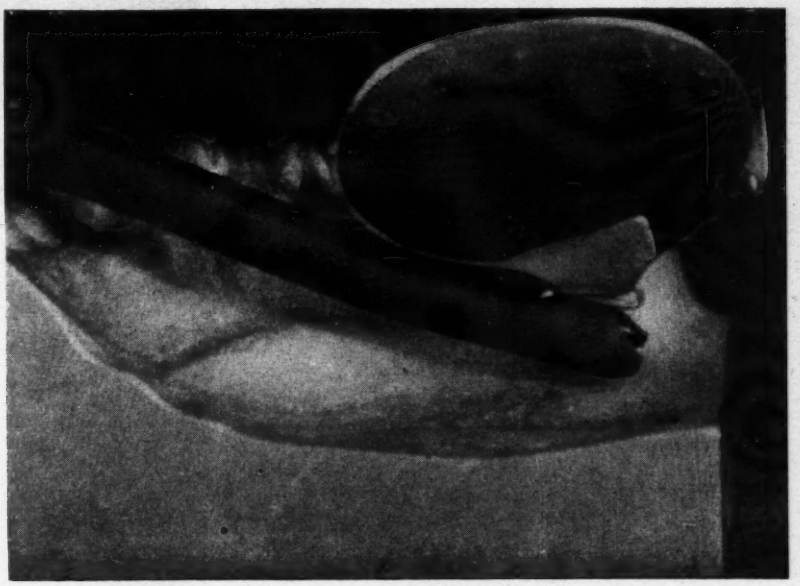


Fig. 4—Lingual view, showing how tubing in passing over anterior teeth automatically depresses its oral end for best site of ejection which is posterior and inferior to tooth under treatment.

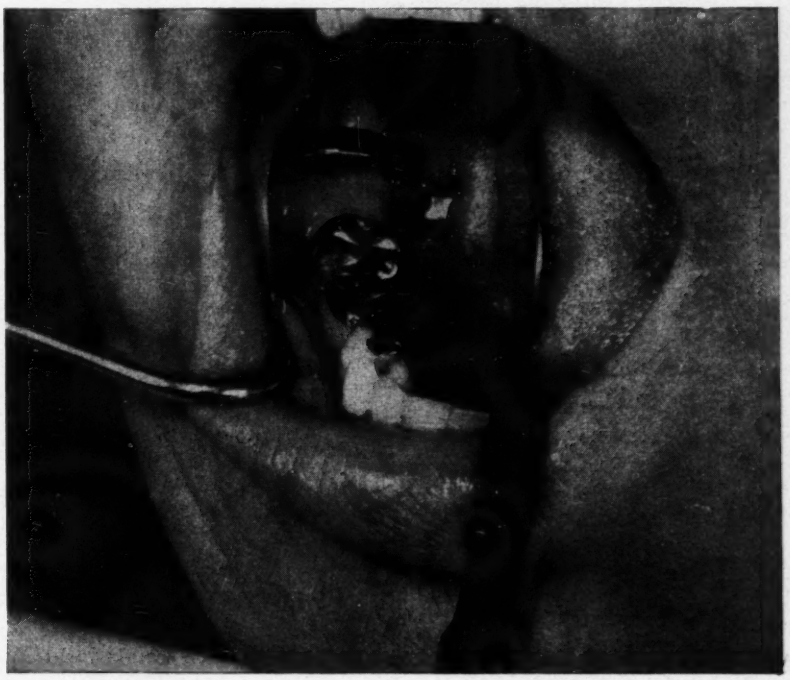


Fig. 5—Apparatus in the mouth; rubber tubing leads over lips, and is fitted to glass or metal tube which is placed in saliva ejector holder of dental unit for suction. (Cheek retractor at right is not part of apparatus but is for photographic purposes.)

amalgam restorations, or setting gold inlays. The use of absorbents may usually be eliminated, especially on the lingual.

The device is useful and convenient, and economizes on the use of wartime precious rubber dam and cotton or cellulose rolls.

Sterilization

Sterilization may be accomplished by washing thoroughly, followed by boiling, or cold non-caustic sterilizing fluids.

1235 *Grand Concourse.*

Meyer Method for Balanced Functional Occlusion

R. M. MORANGE, D.D.S., Chicago

DIGEST

Functional balance provides the necessary degree of comfort for the maximum performance of mastication without interferences.

The jaw motions used to generate the primary path harmonize all the anatomic structures involved into a single unit. These structures are the underlying ridges; the four pairs of muscles directing the effort; and the condyles in their path. The path is then a true Gothic arch tracing in centric without the aid of instruments.

The cuspal path, which is generated against the finished upper, determines the final functional plane and cuspal interdigitation of the dentures. The degree of strong bite pressure used by the patient in its making is of extreme importance, for it is here that the working centric is established. In no other technique is there recorded the teeth relation coupled with the jaw position at maximum pressure.

The special path waxes are designed for exactness and time saving: a tin-foiled wax for the primary path and a tackywax for the secondary path.

Any instrument will do which has rigid stops and arms, a facebow unit, and sufficient opening to accommodate removal and resetting of the casts.

All blocks used in the mouth where they are subjected to extreme pressure must not vary one iota when replaced on the casts from which they were removed.

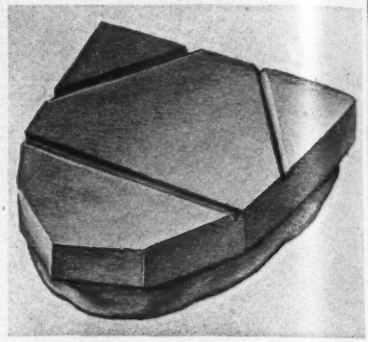


Fig. 1—Model backs grooved. The cast is grooved to facilitate removal from the articulator. Inasmuch as new relationships are established during various procedures in this technique, it is necessary that casts be removed with simplicity from the articulator. Backs and sides of all casts are painted with vaseline before sealing with plaster on the instrument to facilitate removal and replacing.

FOR A SIMPLIFIED method of producing dentures that have balanced functional occlusion the profession is indebted to Fred S. Meyer of Minneapolis. Doctor Meyer bases his technique on the reasoning that every human being has characteristic jaw movements. These are as individual to him as are his gait, his speech, his personality. No two human beings are identical. Satisfactory dentures, therefore, cannot be created by using standardized procedures that do not take into consideration individual variants. Dentures that function successfully cannot be produced with teeth set to arbitrary planes, with jaw motions recorded on precision instruments and reproduced in mechanical articulators. Function is an intimate and individual phenomenon. It is best studied at first hand by observing the patient. In the case of full denture construction, function is best recorded by going directly to the patient to let him record the details of his own particular and unique jaw functional patterns.

Technique

1. *Casts*—When satisfactory impressions have been taken, the casts, which must be no more than from one-half to three-fourths inch thick, are boxed and allowed to harden on a smooth glass surface. The backs are then grooved with a rasp as shown in Fig. 1.

2. *Hard Wax Plates*—Hard wax plates are carefully fitted to the casts. All borders have rolled edges and are of double thickness; the plates are easily removed, and there is no rocking motion.

3. *Facebow*—The arm unit of the facebow is waxed on the upper baseplate; it is sealed and reinforced with sticky wax; carried to the face and mouth for adjustment, and finally, recorded on the instrument with plaster.

4. *Pink Wax Rims*—Pink wax rims are now constructed. First the lower is made, one-half inch wide directly over the ridge. The upper is made to conform to the lower ridge outline, with the depth of the rims greater than required. The upper rim is tried in the mouth and trimmed to the best esthetic anterior incisor edge level—an important point in the future esthetic appearance which is decided and accepted here. The lower rim is now trimmed and tried to the accepted vertical dimension according to the method of choice. The wax rims are stapled together at a retruded centric and set up on the instrument (Fig. 2).

5. *Modeling Compound Rims* — Modeling compound rims are constructed against each of the wax rims. For the lower, use the vulcanite tray from which the impression was made, first shortening the heels, then using compound above and below the tray (Fig. 3). The casts are first lubricated with petroleum jelly. The heated compound is applied and shaped with the fingers and cooled and removed periodically to insure easy removal and accurate fit (Fig. 4). A wobbly block is useless.

6. *Caliper Points* — The caliper points are heated and sunk into the blocks to check the correct, accepted vertical dimension (Fig. 5). Zinc oxide paste in the holes makes them clearly visible at all times.

7. *Reduction of Blocks*—Blocks are reduced 2 mm. each (Fig. 6) to provide space for the soft yielding wax to be forced out as closure proceeds. A 4 inch, 5 inch, or 6 inch curve of Spee may be used in trimming the surfaces of the blocks.

8. *Adaptation of Tin-Foiled Wax*—Special tin-foiled wax, 3 mm. thick, is cut and adapted on each rim, which opens the bite 2 mm. (Fig. 7). This is sufficient thickness to ensure a well generated path.

9. *Generation of Primary Path*—The primary path is generated in the mouth by means of mandibular motions: lateral, protrusive, horizontal, or circular. The blocks are first held in the mouth for five minutes to raise the temperature. The tin foil is lubricated to reduce friction. The free motions are continued until the caliper points fall into place. The blocks are then stapled together at the retruded centric (Fig. 8) and set up on the instrument by plastering the lower cast again.

Before a path is accepted as true, it is carefully examined to see that there is no interference of the blocks with each other. Compound is cut away at points of interference; more wax is added. The jaw motions are resumed.

10. *Construction of Lower Stone Index*—The lower stone index (Fig. 9) is constructed by cutting away all wax and foil, scratching the surface, boxing the margins and pouring stone. The

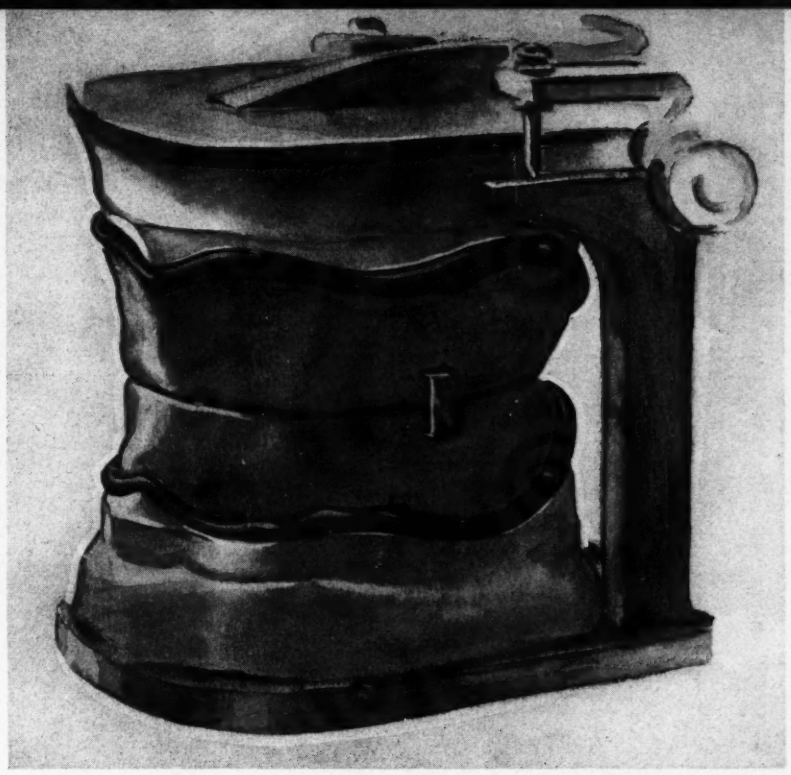
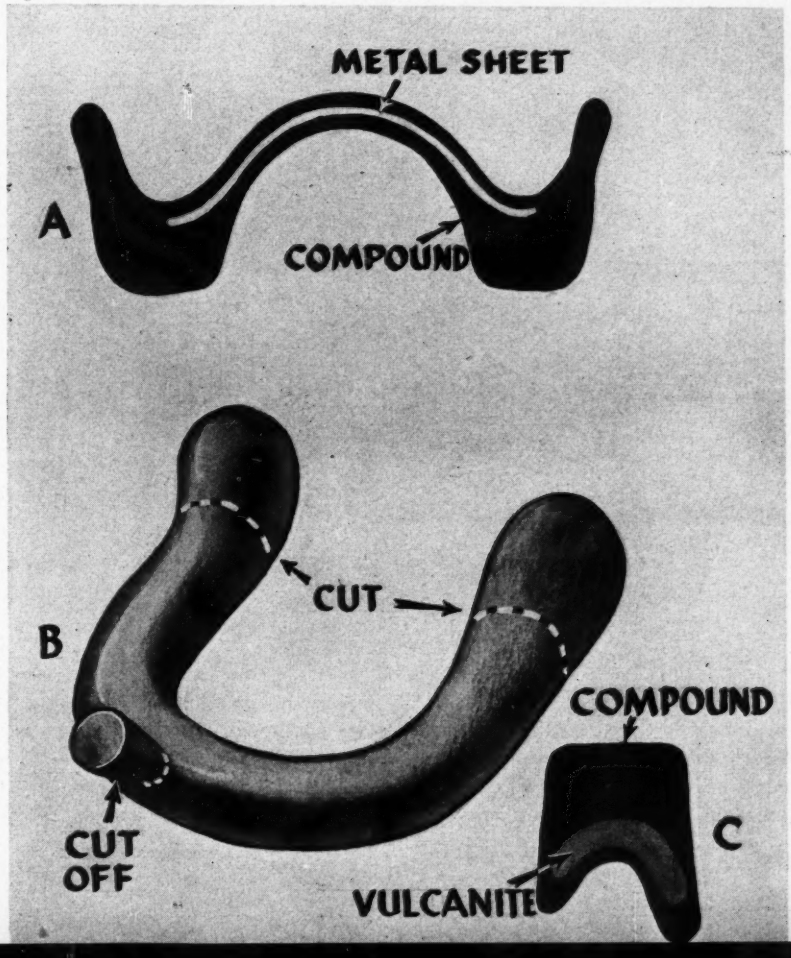


Fig. 2—Hard baseplates and wax bite rims mounted on the articulator. Wax rims are stapled together in retruded centric.

Fig. 3—Upper modeling compound rim reinforced with a sheet of metal and the lower modeling rim reinforced with the vulcanite impression tray. A, Cross section of upper modeling compound rim; B, vulcanite tray for lower; C, cross section of lower rim.



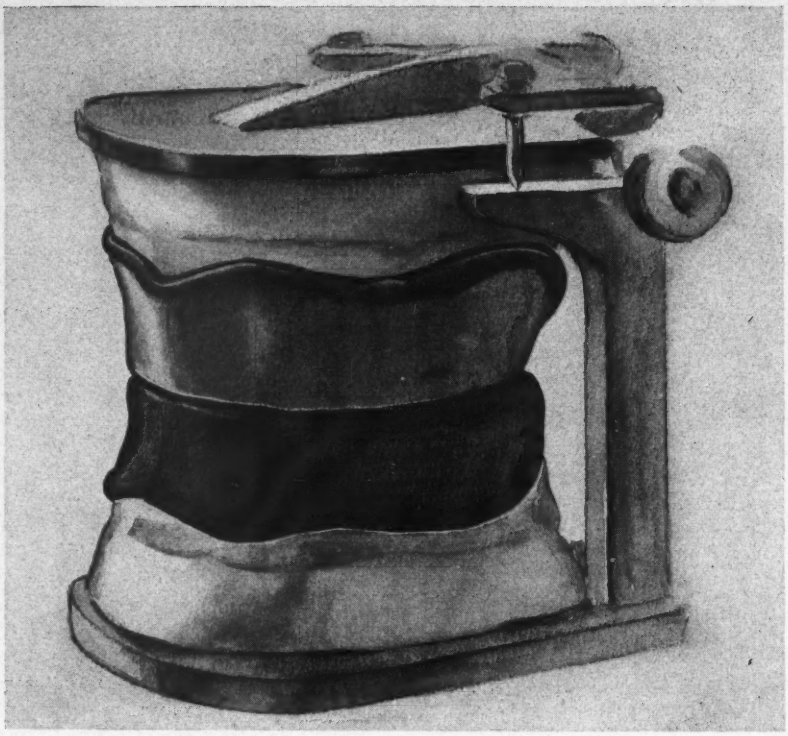


Fig. 4—Lower modeling compound block set against the wax bite rim.

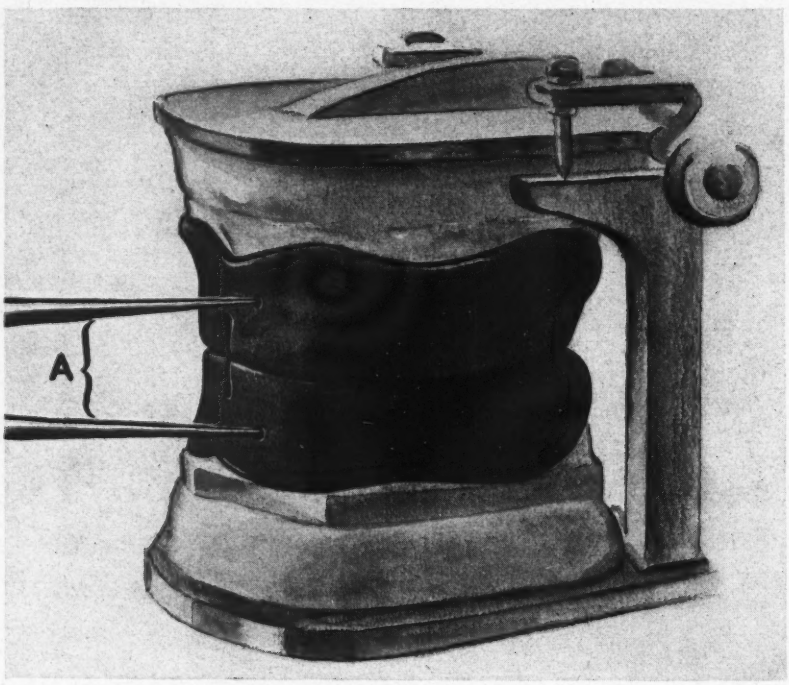


Fig. 5—Modeling compound rims adapted to the upper and lower casts. Calipers are used to record: A, the accepted vertical dimension.

instrument is closed on the stone and the rigid stop set. When the instrument is opened, the upper wax rim replaces the compound block against the stone path, and the teeth may then be set.

11. *Setting of Teeth*—Cusp teeth are used. The molar and bicuspid facets are first grooved. The cusp tips are ground to rest on the path for alignment and poise. All anteriors are set to the esthetics but with incisal edges always on the path (Fig. 10).

Individual irregularities may be introduced. The molar spread from left to right is directly over the lower ridge. The posterior position of the molars depends on the esthetic position of the cuspids. When the setup is completed the cast is carefully removed, processed in the laboratory, and returned to the instrument in its original cast. Check for error and tooth migration, and correct to stop closure.

The processed upper denture is now polished. After grinding the facets, the lower teeth are set up. The anterior lower teeth must be set back of the upper incisors, functional contact with them being reached only by a protrusive effort of the patient. The stone path is cut off and rebuilt with more compound, sufficient to engage the uppers in forcible contact (Fig. 11). Check in the mouth. The lower teeth are checked for esthetic alignment and the cuspal path is checked for the final determination of centric occlusion and vertical dimension.

12. *Preparation of Cuspal Path*—The cuspal path preparation involves trimming and waxing. The sulci eminences and incisal indentations are left as they are. All other cuspal indentations are trimmed away; the outer borders are leveled flat with a sharp knife (Fig. 12). Before the special wax is applied, the block is placed in the mouth and the patient is asked to make lateral and protrusive excursions against the upper denture to remove any remaining compound interference with a free and closed pressure motion.

The block is dried and special wax is applied 2 mm. in depth. The wax is warmed to body temperature and the patient chops through the wax in centric until the compound is reached (Fig. 13). Three cycle motions are now performed by the patient while the operator aids him by holding the block in position with finger and thumb: (1) a protrusive closed sliding motion; (2) a right lateral, and (3) a left lateral motion. The order of

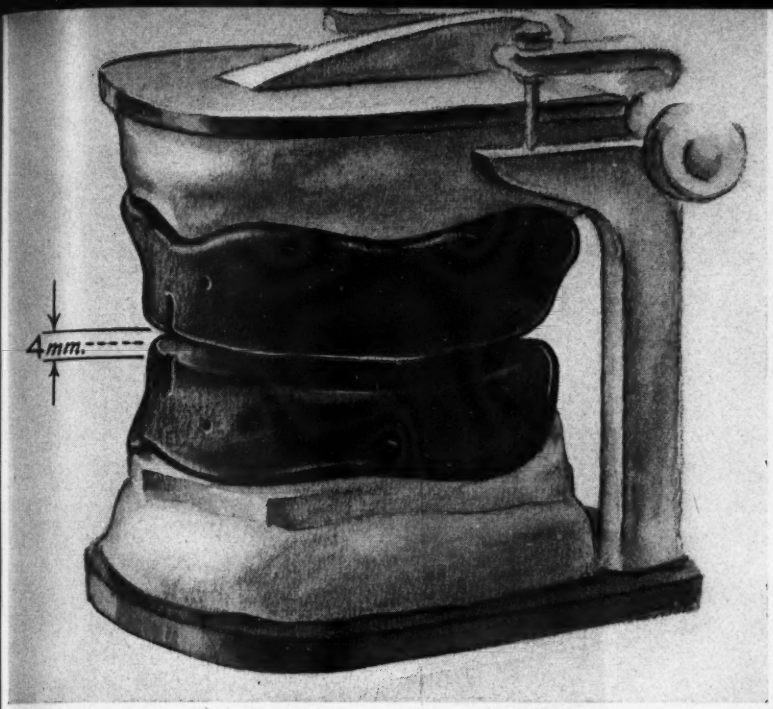


Fig. 6—Modeling compound rims reduced 2 mm. each which provides a space for the soft wax.

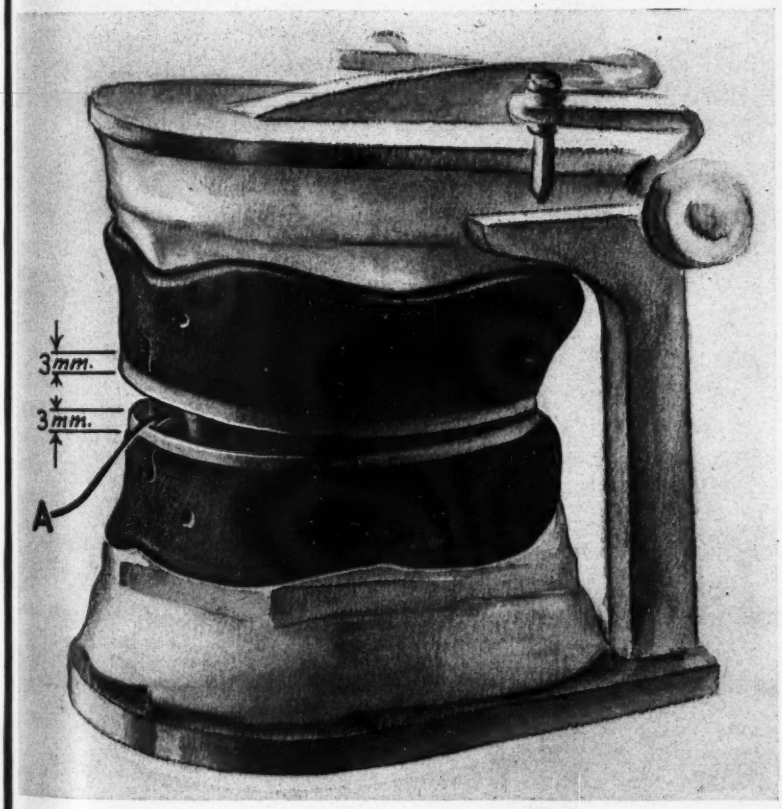


Fig. 7—The adaptation of the soft green wax to the modeling compound rims. This green occlusal plane wax is reinforced with tin foil. Each piece of wax is 3 mm. thick. This opens the bite 2 mm. as shown in Fig. 6, which gives sufficient thickness to insure a well generated occlusal path. A shows foil covered wax.

procedure and extent of each excursion are similar: First slide half the width of a lower central about 2 mm.; relax; close in centric; repeat in each direction. The cuspal path, if accepted as true, is poured in stone and attached to the upper arm of the instrument.

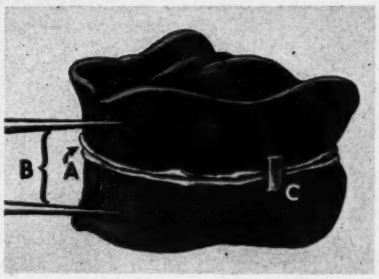


Fig. 8—Modeling compound blocks, stapled together (C) after removal from the mouth. The patient is allowed to generate the proper paths in the soft wax until the exact vertical dimension (A) is reached as recorded by calipers (B).

13. *Cuspal or Secondary Path*—Fig. 14 shows a stone cast of the secondary path. It will be noted how the wax is thrust aside; the character and direction of the lines on each side may be seen. The soft stone is best applied with a brush and vibrated to place, then built up to a height of 1 inch. The block is then waxed to the lower cast and attached to the upper arm with plaster, and the stop pin is set.

The lower teeth are adjusted to the new setting. The posteriors are slightly raised to allow for future grinding. The lower case is processed and when returned is ground against the stone path. Prussian blue dye is used to stain the high spots. When the grinding is complete, the case is polished and is ready for the patient.

14. *Placing in the Mouth*—To remove errors, Kerr's grinding paste is used for no more than two minutes, after which not a tooth can be touched with a stone.

15. *Test of Balance*—When the balance is tested, perfect cuspal and plane contacts during jaw excursions will be found in all directions. Starting at centric, it will be observed that all pressure is on the posteriors; the lower anteriors are free from any contacts with the upper incisors.

The jaw is moved into protrusions, back and forth, to observe all the teeth in harmonious contact. The lateral excursion is made from one-half to the full width of a lower central and held there for a moment. On the balancing side, it will be noted that the lingual cusps of the uppers are riding in contact with the buccal cusps of the low-

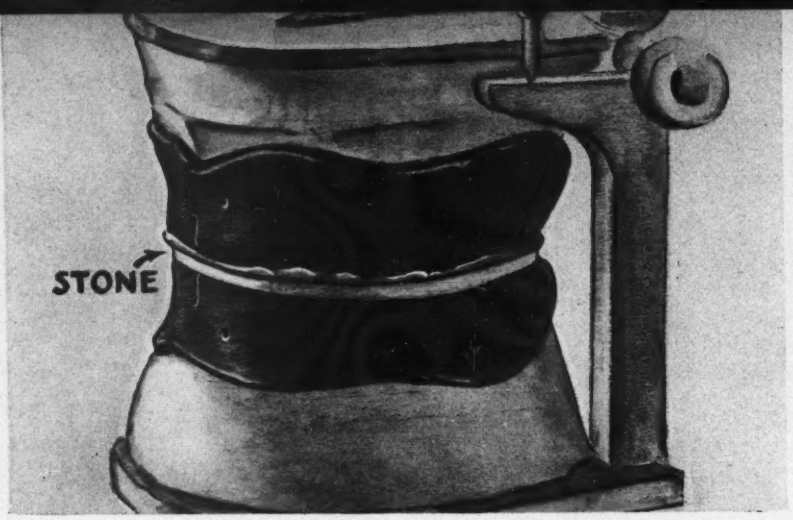


Fig. 9—Wax is removed from the lower block. Block is positioned and a stone index is constructed.

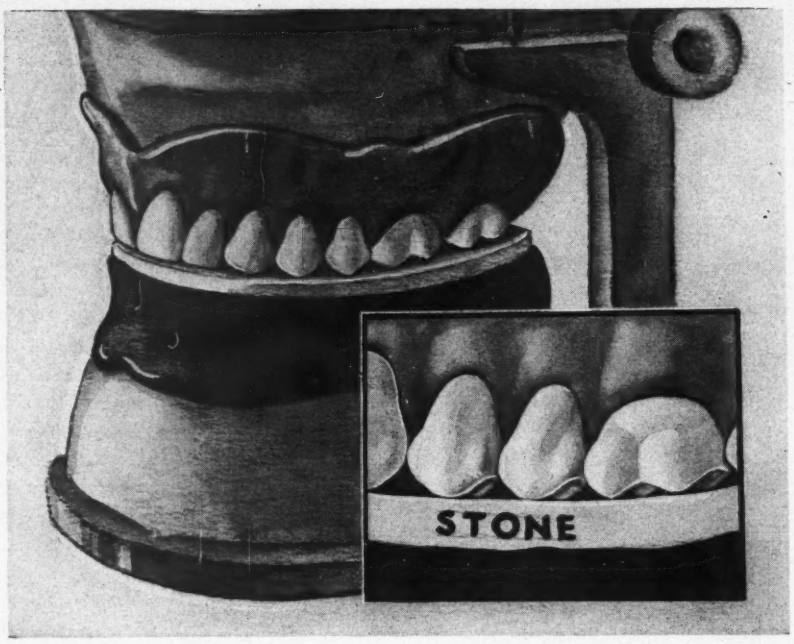
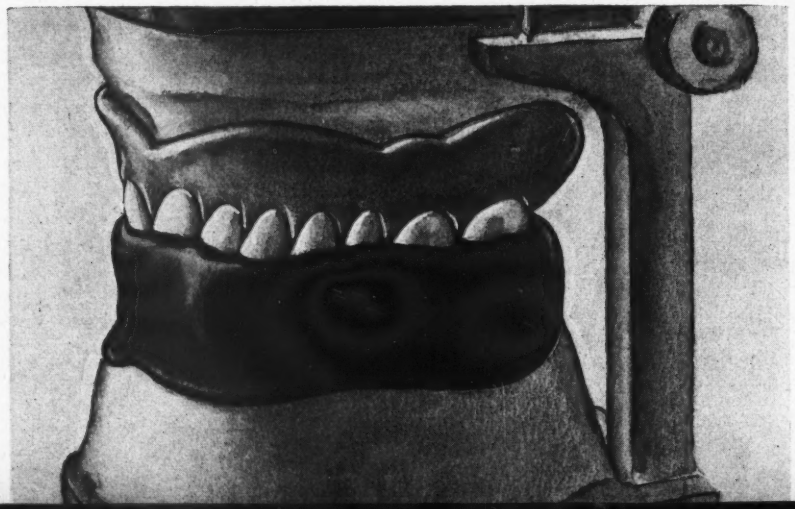


Fig. 10—Upper teeth set against the stone path. Inset shows relation of cusps to surface of stone.

Fig. 11—Stone path has been removed from lower and lower compound block has been built up with sufficient compound to engage upper teeth. Case is closed to proper vertical dimension and indentations of upper teeth are recorded in modeling compound. Modeling compound is trimmed, so that all that remains in lower block are markings of sulci and incisal indentations.



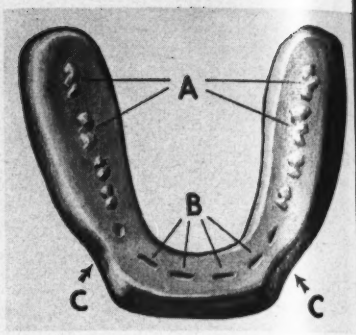


Fig. 12—Modeling compound block is covered with soft pink wax (synthetic tackywax) to a depth of 2 mm. The patient bites through this soft wax in centric, protrusive, right lateral and left lateral. A, Imprints of sulci of molars; B, incisal indentations; C, depressions in modeling compound block to accommodate fingers while holding block stable when recording jaw movements.

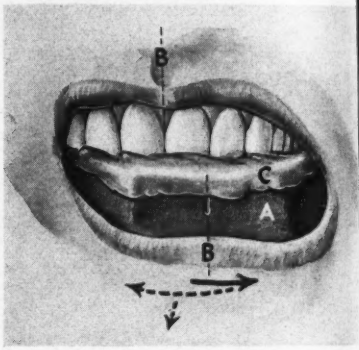


Fig. 13—Wax-covered modeling compound block in the mouth as the patient begins the recordings: A, Compound block; B, median line; C, tackywax with teeth embedded. The block, A, is moved to right, to left, and in protrusive against teeth, tackywax being forced to limit of motions.

Fig. 14—A stone cast representing the secondary path. Lower teeth are set against this cast.

ers; whereas, on the opposite and functional side, the buccal cusp of the uppers and lowers are also in direct contact with one another.

5505 *South Ashland Avenue.*

The Editor's Page

ALTHOUGH THE practice of dentistry is chiefly concerned with the application of mechanical skills to living tissues there is a strong element of the psychic factor in almost every dental situation. The whimpering child approaching his first dental appointment is possessed of a fear of the unknown. The treatment of the carious process in the deciduous tooth is only a part of the management of such a case. The child must receive understanding treatment as a personality in the making. The adult who is full of anxieties and nameless dreads as he anticipates the dental experience has a psychic problem superimposed on his physical one. The edentulous older patient may unconsciously associate his edentulous state with general physical deterioration. Dentists and physicians generally have not been trained to think of the human organism except as a physiologic mechanism. We have been so inculcated with tissue pathology that we have come to look on it as the only expression of disease. We know now, of course, that structural alterations bring about cellular disease which in turn produces functional impairments, and the whole chain of events may have had the beginning in a psychic disturbance.

Many books have been written on the subject of psychosomatic medicine. One of the latest and best covers the field for the most part with understanding detail: PSYCHOSOMATIC MEDICINE by Edward Weiss and O. Spurgeon English.[1] The dentist should know more about psychosomatic medicine. Psychosomatic medicine is not so-called psychology. It is not concerned with "tricks and salesmanship and handling people." It is rather an attempt to see the patient as a whole—a person made up of many parts, the chief of which is very likely the psyche. The authors describe the psyche or personality thus: "The psyche or personality is an organ which has many parts and many functions. It acts as a coordinating center to achieve such immediate physical and emotional satisfactions as are socially permissible and at the same time makes plans for those which are best reserved for the future. The parts of the personality have to work together harmoniously in order to gain the emotional rewards which maintain adequate self-esteem. A marked and prolonged fall in self-esteem may be as devastating to the functioning of the organism as a marked and prolonged reduction in the blood count. The personality must have an optimum number of sound, logical ideas, well related to all environmental activities, for a poverty of ideas may be as disastrous as a poverty of red or white blood cells."

The over-all value of this book is excellent. By careful study of the precepts given, we should as dentists appreciate that the patient in the chair has different thought processes from the operator. To the patient the dental experience is either new and unfamiliar or it is familiar and associated with unpleasantness. In either case it carries with it anxieties. The operator regards the experience casually and considers it solely routine. The patient and the operator thus regard the same experience from entirely different points of view, so that it is easy for misunderstandings and lack of sympathy to develop. The patient with his fleeting, idiopathic pains, with his dentures that are unsatisfactory, may suffer as much as patients with demonstrable physical lesions. If, along with our technical skills, which we should develop to the highest degree, we learn a little more about psychosomatic medicine, it is likely that we can give our patients a fuller service.

Although the authors have produced a volume that is generally worth while, they have gone a bit overboard in their sub-chapter on dentistry. In describing people who receive a certain perverse satisfaction from having their teeth "pulled" the authors have ridden the Freudian theory too hard: "Another unconscious motive in this sacrifice of organs is to help get rid of a sense of guilt. This sense of guilt usually dates back to childhood and resides in the unconscious mental life so that such patients do not realize that they are trying to assuage guilt when they periodically suffer the pain and make the sacrifice of having something removed, be it from the mouth, abdomen or the pelvis."

Psychosomatic medicine may seem a far cry to the dentist who is concerned with mechanical and technical procedures. The subject is certainly not discussed here as a suggested substitute for the mechanical arts. But the ability to integrate dental skills with human understanding makes for greater satisfaction for both the patient and the dentist. It would be well if more of our dental programs were given over to the consideration of dental patients as total personalities.

[1]Weiss, Edward; and English, O. S.: Psychosomatic Medicine, Philadelphia, W. B. Saunders Company, 1943.

Immediate Denture Service for the Soldier

MAJOR WILLIAM F. TOLAR and MAJOR WILLIAMS A. FERGUSON, Fort Bliss, Texas
Dental Corps, Army of the United States

DIGEST

The reasons for full denture service to the soldier are: (1) carious and badly broken down teeth; (2) gross amount of alveolar resorption; (3) insufficient teeth to make satisfactory partial dentures.

The reasons for immediate denture service for the soldier are:

1. The muscle tone is not lost through a period of delay without teeth before other type dentures may be constructed.

2. The soldier, after the first or second day, may go about his daily routine without being inconvenienced by the loss of teeth and worrying about his personal appearance.

3. The immediate denture stimulates healing by acting as a splint, such as is employed in other types of bone surgery.

4. The immediate establishment of the habit of wearing dentures rather than allowing the patient to grow accustomed to being edentulous is an advantage.

5. The effect on morale is good. Soldiers invariably ask, "Now, how long do I have to be without teeth?"

The success of immediate dentures depends on close cooperation between the oral surgeon and prosthodontist, both before the case is started and after casts are made and prepared for construction of dentures.

Carefully taken impressions; carefully poured casts; determination of correct jaw relationship; carefully processed dentures by the laboratory — these are other factors in successful immediate denture service.

THE SOLDIER does not enjoy the luxuries of home treatment as a civilian. By this we mean that he cannot get mashed potatoes, cooked cereals, or a soft diet whenever he wants it. He must eat the same mess as those soldiers having sufficient teeth to masticate the army ration, or be hospitalized until the dentures can be made, and if this is not done the soldier without teeth will have to push the bolus of food around in his mouth until he can gulp it down, with the inevitable consequences to his digestion.

It is essential in a civilian army, that the soldier should not miss any considerable time from his training period. This loss of time may mean life or death to him or his buddies when in action on the field of war. A man does not lose his pride nor his esthetic values because he is a soldier in the military service, and he therefore does not wish to be seen edentulous.

It has been necessary to give so much denture service to men in military service as a result of changes in standards of dental requirements for the soldier. The initial standards of dental requirements at the beginning of the emergency presented too high a proportion of rejections, and therefore, the dental requirements for entrance into the Army by the selectees was lowered drastically. A ruling dated March 9, 1942, stated that the edentulous maxillary and practically edentulous mandibular arches (with two or more natural teeth serviceable as abutments) were acceptable. This regulation did not require that artificial restorations be in place—only that the dental condition be correctable. A more recent ruling states: "Individuals who are well nourished, of good musculature, are free from gross dental infections, and have a minimum requirement of an edentulous upper jaw or an edentulous lower jaw, corrected or correctable by a full denture or dentures will be acceptable."

The prosthetic section of the Army Dental Corps was thereafter faced with an increased load and function. A soldier coming into the service needing prosthetic treatment was classified as a Class III in the Army dental clinics. Recently, September 10, 1942, a change was made in Army Regulations 40-510 stating that those individuals with insufficient teeth to masticate the Army ration would be placed in Class I. This is an emergency classification and indicates that the patient should have immediate treatment.

We started to provide immediate denture service at the Station Hospital about six months ago when a patient from a nearby post entered the hospital for necessary dentistry. After consultation with the Chief of the Oral Surgery Service, we decided to make this soldier an immediate full upper denture and a partial lower denture. The soldier was hospitalized for several days; heretofore, it might have been several weeks. Since then about 100 immediate dentures have been inserted with a high incidence of success.

Technique for Immediate Denture Service

1. After the posterior teeth have been removed and the ridges have sufficiently healed, modeling compound impres-

sions are taken. A good snap impression is taken, so that all necessary landmarks are included, with a slight over-extension.

2. The impression is chilled, and the impression of the teeth removed from the impression to permit ample room in the modeling compound for a "wash" with an elastic impression cream.

3. Casts are poured.

4. Baseplates are adapted to casts.

5. The wax-bite impression is obtained to determine the jaw relationship.

6. The posterior teeth are set and then tried in the patient's mouth to check the jaw relationship.

7. Gingival margins, labially and lingually, are outlined as a guide in cutting teeth from the cast.

8. At this time the cast is relieved according to the form that the ridges are to have in the finished case. At this point the casts are shown to the oral surgeon for suggestion as to the necessary amount of bone to be removed.

9. A cast is prepared for a clear acrylic matrix, to be used as a guide by the oral surgeon regarding the amount of bone that is to be removed.

10. The case is now ready for processing. At the laboratory, the teeth remaining on the cast are cut off, one at a time, and replaced with a porcelain tooth that closely resembles what might have been the natural tooth. The case is processed and returned to the clinic. (Before the case is delivered, the base material of the denture, which fills the remainder of the sockets is removed.)

Comments

In the series of 100 cases of immediate dentures inserted the following figures are given: The maximum age of soldiers given immediate denture service was 45 years; minimum age, 20 years; the average age, 29 years.

The maximum number of teeth extracted before insertion of immediate dentures was 8, the minimum, 3; the average, 6.

The average number of postoperative treatments given over a period of a month after the day of insertion was 8.

Station Hospital, Dental Clinic No. 2.

Simplified Technique for Mandibular Impressions

JOHN W. NYSTUEN, D.D.S., Algonquin, Illinois

THE INTRODUCTION of the gel-type impression material has enabled the dentist to secure a mandibular impression without the usual over-compression of tissue, and with a detail not always possible heretofore, especially regarding the knife-edged ridge, with small undercuts, and, in some instances, a flabby area occurring in the anterior ridge.

Technique

1. A snap impression is made, extended beyond the retromolar area posteriorly, and below the mylohyoid line lingually.

2. The compound is muscle-trimmed, and a model is poured in stone.

3. On this model is traced the usual outline form: the buccal and lingual muscle attachments, the retromolar triangle, the mylohyoid line, and the external oblique line. In those cases in which the attachment of the mylohyoid muscle will permit it, the lingual outline is extended as deeply as possible into the throat. Usually this places the lingual heel of the denture in a direct line below the distal border of the retromolar triangle.

4. A loosely-fitting tray is made according to this outline, either of metal or trial base-plate material reinforced; a bite rim is fitted, and the tray perforated heavily with a round bur.

5. The tray is filled with smoothly spatulated colloidal impression material, and placed in the mouth with light pressure.

6. Holding the tray in place, ask the patient to protrude the tongue as far forward as possible, to try to touch the upper lip and the corners of the mouth. Then allow the patient to close on the bite rim.

7. During the interval of setting time, the labial and buccal muscle-trimming is done by the patient's moving the lips forward in a puckering motion as though to whistle, and back. At the same time the tongue is moved forcibly in all directions.

8. The denture is completed to this outline.

Comments

Very little trimming will be found necessary on the buccal and labial borders of the denture. The trimming of the lingual border is determined by the patient during actual mastication and is done only as soreness arises from impingement on the muscles of the floor of the mouth. This trimming is done without impairment of the denture, because no peripheral seal is being trimmed away. Suction is obtained only through the close adaptation of the denture in all areas. In this way a patient is given as large a denture as he is physiologically able to handle and with all the adhesion made possible by the elastic impression material.

Contra-Angles

The Case of Mrs. A. . . .

We usually raise our voices in the cry that American people do not receive enough dentistry. Very seldom do we hear the admission that some people have too much dentistry done. The case of Mrs. A. is a case in point. She did not have good dentistry in her mouth, but she was reasonably comfortable. To her disadvantage dentally, Mrs. A. was a woman of some means. Perhaps the dentist she had consulted was in need of a vacation or his wife wished to do some extensive entertaining and there was no money in the family treasury, so Doctor N. did a little sales job. The roentgenograms reproduced below show a couple of areas in Mrs. A.'s mouth at the time treatment was begun and the condition after "treatment." The conditions shown here are not good. The restorations in the upper teeth had much to be desired to begin with, but they were worse after so-called treatment. The crown on the pulpless lower is an abomination built on a root that probably should be removed. Doctor N. was in a fine sales fettle the day Mrs. A. consulted him. He tampered with the restorations in the upper jaw to produce the monstrosity shown. This fancy attachment on the molar supports a removable bridge supplying the upper second molar. It is one of those bridges that is a perfect lever. A car could be parked under the crown of the lower molar;

Fig. 1 (Before)

Fig. 2 (After)

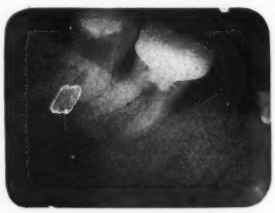


Fig. 3 (Before)

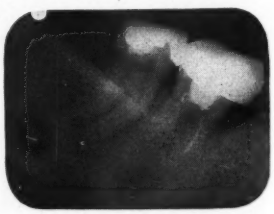
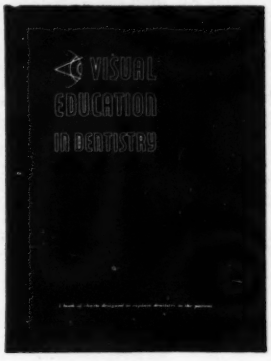


Fig. 4 (After)



Not a New Edition But . . .

ANOTHER REPRINTING (the seventh)

The demand for copies of *Visual Education in Dentistry* has made it necessary for us to reprint the booklet recently. This is not a new edition. Instead it is a new reprinting since the booklet is the same as that which has been available for the past two years.

A dentist has just written us: *"Enclosed is check for* $2.00 *for two copies of Visual Education in Dentistry. The third copy I have is worn out from handling so much. Its worth to me can hardly be computed."*

Perhaps your copy is worn and needs to be replaced now. Or if you have never used these charts in your practice we know you can use them to advantage. The new reprinting sells to regular subscribers to *The Dental Digest* at the same price as before, $1.00. To non-subscribers the price is $2.00 unless purchased with a subscription.

The coupon below is for your convenience.

Contents

(A new *reprinting* [the seventh] completed only recently)

1. Dental Conditions
2. Development and Eruption of Teeth
3. The Progress of Tooth Decay
4. Why Construct a Bridge?
5. How Irregularities of the Teeth Affect the Face
6. Modern Porcelain Restorations
7. The Expense of Poor Dentistry
8. The Development of Root-End Infections
9. A Stitch in Time Saves Nine
10. When the Dentist Fills the Tooth
11. "Things Are Not Always What They Seem . . . "
12. The Development of Jaws and Teeth
13. Diseases of Teeth and Trees
14. The Collapsed Face
15. "Be Not the Last to Lay the Old Aside . . ."
16. The Foundation's the Thing
17. Insulation
18. "One Rotten Apple May Spoil a Bushel"
19. The Circulation of the Blood
20. Pyorrhea Treated or Neglected
21. The Action of Local Anesthesia
22. "A Little Neglect May Breed Mischief . . . "
23. The Fifth Cranial or Trigeminal Nerve
24. Danger Begins at Six
25. How a Full Denture Fits
26. How the Loss of Teeth Affects the Face
27. The Danger from the Impacted Tooth
28. What Does the X-Ray Show?
29. The Requirements of a Correct Restoration
30. Development of the Skull

The Dental Digest

1005 Liberty Avenue, Pittsburgh 22, Pa.

Enclosed is $..... Please send ..... copies of Visual Education in Dentistry promptly.

Dr. .....

Address .....

City ..... State .....

Dealer's Name .....

or, if Mrs. A. chose to be a smuggler, she could stick a 5 karat diamond under this overhang. Although the crown doesn't fit the case, it houses the female part of one of these fancy attachments.

Mrs. A. is a long way advanced toward losing her teeth, not because they were necessarily badly diseased; certainly not because she neglected them. Her trouble was that she consulted a dentist who was more interested in gadgets than in pathology, more interested in the purse than the patient.

It is distressing to be a scold, to find it necessary to expose the foibles of dentists. We all hang our heads in shame now and then and admit that we turn out a certain amount of poor dentistry in the course of our practices. That goes for the masters in the profession as well as the rank and file. But the case of Mrs. A. appears to be a deliberate attempt to destroy the woman's dental mechanism.

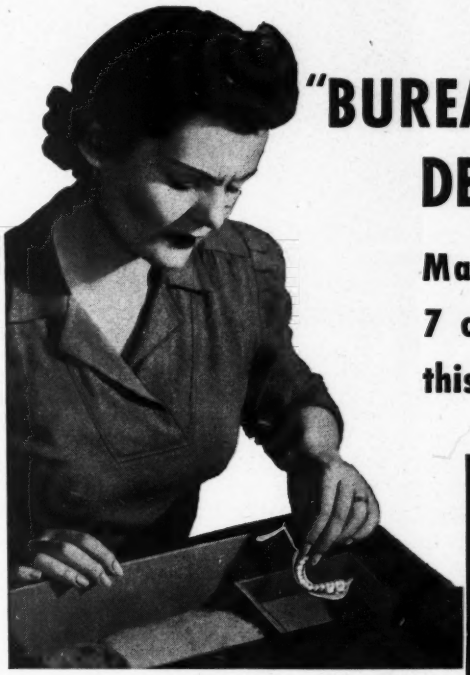
"Indirectitis"...

Now that we are taking down the hair of the dental profession and looking closely at the scalp, here is another little fault most of us should overcome. I am indebted to Robert F. Lentz of Anna, Illinois for the description of the dental clinical attitude termed, "indirectitis":

"The journals, from time to time are filled with techniques on how to do things the long hard way. I have read about indirect techniques until sometimes I think it is a disease. Some have referred to it as 'indirectitis.' When I was young and courting my lady, I had 'indirectitis' when taking her home. I wanted to go the longest way round. Some practitioners of dentistry like to go the longest way round also.

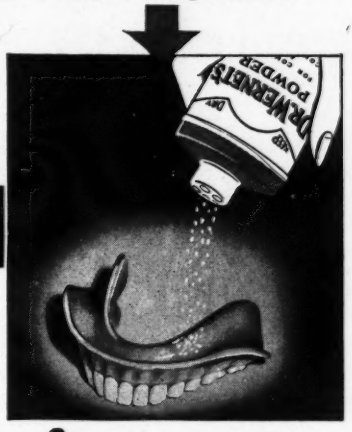
"It is much easier and quicker to form the wax pattern directly in the cavity of the tooth than to reproduce this cavity in a working model; but in a great many cases, we have tinkerers affected with indirectitis. I visited a dentist who had this disease. He was pushing gum tissue out of the way; mixing colloid; put-

(*Continued on page* 364)



"BUREAU-DRAWER" DENTURES

May be avoided in 7 out of 10 cases by this simple expedient



"I don't use them to eat with"
—you hear it many times from patients who become discouraged with their new dentures during the critical adaptation period. Through no fault of the dentist, many a denture becomes a "Bureau drawer" denture—to be used and worn only on special occasions.

In 7 cases out of 10, a gentle dusting of Wernet's powder would make all the difference, hasten the patient's adaptation to the denture, promote satisfaction with the dentist's work, remove the new plate from the "Bureau drawer" classification.

Impartial laboratory tests prove Dr. Wernet's powder to be 26.1% whiter and purer than the average of leading competitors; 50% more viscous (for maximum security) and 46.5% more absorbent (for faster denture control).

Free supply on request to Wernet Dental Mfg. Co. Dept. 7-H, 190 Baldwin Ave., Jersey City, N. J.

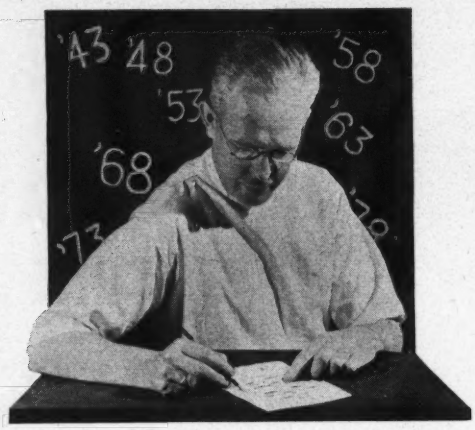
Dr. Wernet's powder is acceptable on sight to the patient, easy and pleasant to use because of its delicacy and purity. It helps adapt the patient to the new denture and is good insurance against unfounded dissatisfaction or criticism.

So Pure You Eat It in Ice Cream
The basic ingredient in Dr. Wernet's is the same as is used in the making of ice cream.

DR. WERNET'S POWDER

ADAPTS THE PATIENT TO THE DENTURE

In your ORAL HYGIENE this month



"Would you like to take a state-board every five years?"

That is the provocative title of Doctor Jacob L. Chivian's article in August ORAL HYGIENE. Maybe you won't agree with the author's belief: "Every man should be a candidate for re-examination in practical dentistry every five years in order to deserve the privilege of practicing modern, ethical dentistry in this modern day."

"We Need Dental Hygienists," says Doctor L. M. Smith, who takes vigorous issue with Doctor Charles L. Hatcher, who contributed "Are Dental Hygienists a Menace?" in the May issue of ORAL HYGIENE.

"A Dentist Enters the Service," by Lieutenant David C. Easley, Jr., (DC), presents the intimate reflections of a dentist whose pulse rate increased, whose mind stopped functioning, when, over the phone, "a calm, deliberate voice" ordered him to report for Army service. It's a reassuring article, though.

"Your Fingerprints Will Protect You," explains Herman A. Moran, who tells how a simple device will protect dentists against forgery and against bogus checks.

"How to Kill a Dental Practice" appears again this month. The August picture-page is about long-winded telephone conversations as dental-practice killers.

"The Pay-As-You-Go Tax Bill" has likely had you cutting out paper dolls. ORAL HYGIENE engaged a certified public accountant, Samuel Hacker, to write about it. Maybe his article will help you detour the loony bin!

Departments in August ORAL HYGIENE include "Ask ORAL HYGIENE," and "Technique of the Month," and "Dear ORAL HYGIENE," and "Dentists in the News," and "Military News," and "Editorial Comment," and "Laffodontia," and "The Corner."

Oral Hygiene

ting more of the material in a tray; fixing up impressions; taking bites; pouring models; mounting on an articulator; waiting for models to set; tiddling around, just as if he had a week to make the inlay. I asked the dentist for a little wax. With this wax I made a pattern. The pattern was perfect, although formed right in the cavity of the tooth itself. I did this while he was waiting for the articulated models to attach themselves to the articulator.

"The dentist wondered what the cure for his indirectitis might be. I told him that it consisted of a little normal straight thinking, combined with a little technical ability, coupled with a wish to do the best dentistry in the shortest possible time. This would break him of the tinkering complex.

"On visiting another dentist friend, I found him replacing a chair round, which had broken from the uprights of a chair. He was taking an impression of the holes in the two uprights of the chair with modeling compound and pouring them in stone. I asked him what his reason was. He said that according to mathematical formulas the round that would fit in the plaster hole naturally would fit in the holes in the uprights. He had it: another case of indirectitis!

"I will wager anyone that I can make eight wax patterns in that many cavities in teeth, directly in the mouth, while the dentist with indirectitis is preparing the models preparatory to making one wax pattern. And, because there is the 'master' model to go by, it can be done better in the mouth.

"I will also wager that I can mallet a gold foil and have the patient dismissed by the time the models are articulated by the indirect method. After my patient has gone home, the indirect addict will still have to wax his pattern, invest, cast, and have the patient return a second time.

"It is my opinion that the majority of indirect technicians are tinkerers."

Again, the Hard Way . . .

Sometimes dental organizations do things the hard way. I have been disturbed to think that the American

Dental Association does not allow its incoming president to deliver an inaugural address outlining in general terms what he hopes to do during his administration and soliciting support from the House of Delegates for his program. In the case of the American Dental Association the president presides at the meeting of the House of Delegates at the end of his administration. His only formal address to the House is given when he is about to retire from office. On the last day of the session of the House, the new president is installed. He has no opportunity to appeal to the House of Delegates in specific terms for support nor does he indicate the pressing problems before the administration.

When a president of the United States is inaugurated, he addresses the Congress and the people, indicating what the issues are of the moment and how he hopes to meet them. There might be more vigorous leadership in dental organizations if this procedure were followed. The men who have been honored with the presidency of the American Dental Association have been, almost without exception, eminent members of the profession, hard-working, honorable men. In his single year of office, however, by the time each man gets projects well under way his retirement arrives, before his purposes can be accomplished.

It would be far better, if, during the year as president-elect the officer would have the opportunity to study the dental field and be prepared at the time of his inauguration when his administration begins to set down the course that he hopes to follow and the program that he wishes to carry through to completion. It is rather an anticlimax to have a president deliver his address when he is leaving office when he will soon be beyond criticism or comment or effectiveness.—E. J. R.

See third cover D.D.8

THE COLUMBUS DENTAL MFG. CO.
COLUMBUS, OHIO

Please send Steele's New Hue Technic.

Dr. .....

Address .....

City .....

See pages 334-335 D.D.8

VERNON-BENSHOFF CO.
P.O. BOX 1587, PITTSBURGH, PA.

Please send Vernonite information.

Dr. .....

Address .....

City .....

See page 336 D.D.8

COREGA CHEMICAL CO.
208 ST. CLAIR AVE., N.W., CLEVELAND, OHIO

Please send free samples for patients.

Dr. .....

Address .....

City .....

See page 337 D.D.8

COOK-WAITE LABORATORIES, INC.
170 VARICK ST., NEW YORK CITY

Please send literature.

Dr. .....

Address .....

City .....

See page 338 D.D.8

BRISTOL-MYERS CO.
19EN WEST 50TH ST., NEW YORK CITY

Please send Sal Hepatica literature.

Dr. .....

Address .....

City .....

See page 360 D.D.8

THE COORDINATOR CO.
NEW ULM, MINN.

Please send information.

Dr. .....

Address .....

City .....

See page 361 D.D.8

THE DENTAL DIGEST
1005 LIBERTY AVE., PITTSBURGH, 22, PA.

Here is $1.00. Please send me a copy of Visual Education in Dentistry. I am a subscriber.

Dr. .....

Address .....

City .....

Dealer .....

See page 363 D.D.8

WERNET DENTAL MFG. CO., DEPT. 7H
190 BALDWIN AVE., JERSEY CITY, N. J.

Please send free supply of Wernet's Powder.

Dr. .....

Address .....

City .....

See page 366 D.D.8

THE HYGIENIC DENTAL RUBBER CO.
AKRON, OHIO

Send literature on Rosetone and new "Quick-Pack" technique.

Dr. .....

Address .....

City .....

See page 367 D.D.8

WILMOT CASTLE CO.
1109 UNIVERSITY, ROCHESTER 7, N. Y.

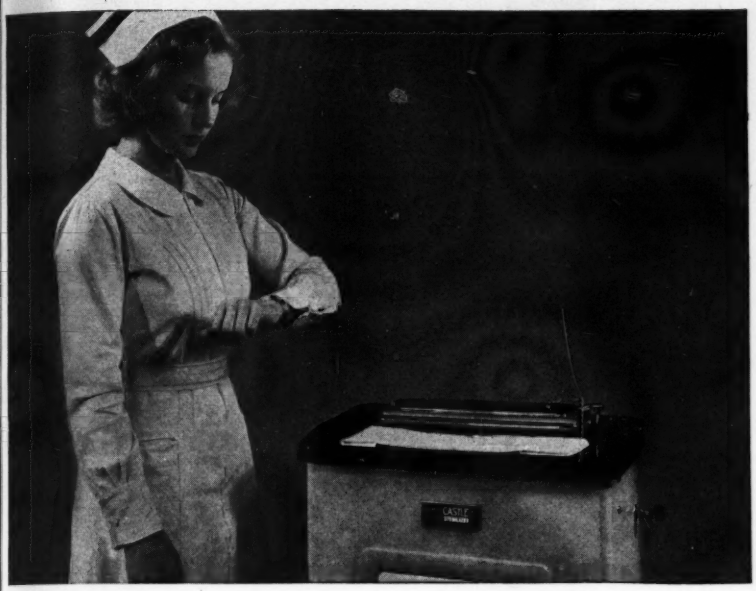
Please send book on "Sterilizing Technique."

Dr. .....

Address .....

City .....

Dealer .....



10 minutes for your Instruments' sake

Careful attention to sterilizing technique gives you sterile instruments to work with, preserves cutting edges and helps make your sterilizer last longer.

1—Bring water to vigorous boil.
2—Immerse instruments, keeping water boiling.
3—At end of 10 minutes—*no more, no less*—remove instruments and dry by rolling on sterile towel.
4—Drain and wipe sterilizer dry each day. This prevents accumulation of crust of hard lime.
5—Castle Sterilizer Tablets help prevent corrosion and liming.

Write for Castle Book on "Sterilizing Technique".

WILMOT CASTLE COMPANY
1109 University Ave. • Rochester 7, New York

CASTLE STERILIZERS

See page 368 D.D.8

THE W. V-B. AMES CO.
FREMONT, OHIO

Please send copy of booklet "Dentistry for Children."

Dr. .....
Address .....
City .....

See page 369 D.D.8

H. D. JUSTI & SON, INC.
PHILADELPHIA, PA.

Please send data on packing acrylic dentures.

Dr. .....
Address .....
City .....

See pages 370-371 D.D.8

ACRALITE CO., INC.
257 WEST 38TH ST., NEW YORK CITY

Please send information.

Dr. .....
Address .....
City .....

See page 372 D.D.8

THE DENTAL DIGEST
1005 LIBERTY AVE., PITTSBURGH, 22, PA.

Here is $1.75. Please send one binder for .....volume.

Dr. .....
Address .....
City .....

See page 372 D.D.8

HARRY J. BOSWORTH CO.
1315 S. MICHIGAN AVE., CHICAGO, ILL.

Please send Zorite information.

Dr. .....
Address .....
City .....

See page 333 D.D.8

KONFORMAX LABORATORIES, INC.
1720 AVENUE Y, BROOKLYN, N. Y.

Please send folder mentioned in ad.

Dr. .....
Address .....
City .....

USE

LAVORIS

Do Not Buy Imitations

Genuine Lavoris is sold in sealed cartons only

Dentistry in the Armed Forces and in the Government Agencies

(*Continued from page* 349)

trol and efficiency in the Dental Corps could best be handled by dental officers.

"There is also need for a more equitable plan of promotion of the officers of the Dental Corps, and this is especially true with regard to temporary appointments during the emergency. In some of the governmental departments, there is need for a permanent plan of promotion of its officers and the setting up of a separate dental division. . . .

"Under the present set up, during this emergency, dentistry finds itself in the same position as before the enactment of the 1917 law; namely, it does not have enough officers of sufficient rank and grade, in comparison with the Medical Corps, to enable it to perform and operate at maximum efficiency.

"There is great urgency for the more rapid promotion of dental officers who have been taken in as lieutenants. There should be a larger percentage of lieutenants made captains to establish a ratio similar to that of medicine. There is also reason to promote many of the captains to majors, and so on. Most of the discrepancies are in the lower ranks, and the greatest need at the present time is in those ranks. The President of the American

JUSTI RESEARCH Suggests:

ENTA PEARL for teeth + DIE-MAC for index + FILM-AC for separation + JUSTI-TONE for the denture base = complete all acrylic enture.

USTI-TONE (standard, light, or clear) should be (1) mixed, (2) acked, (3) processed, like all good acrylic denture bases.

ixing: Three parts polymer to one part monomer, stir well, let stand closed jar until doughy. (Heat hastens set, cold retards set.) Passes rough three states (1) sandy, (2) sticky, (3) doughy—pack when oughy.

acking: (1) Divide dough into small pieces and pack. This prevents st-opening contraction resulting in pulling away from sides of flask, splacement of teeth, etc. (2) Test pack well to insure adequate compression. (3) Pack in warm flask, not hot, not cold.

rocessing: (1) 158° one hour — boil one hour, bench cool; or

(2) 180° three hours, bench cool; or

(3) Bring slowly to boil in one hour, boil one-half hour, bench cool.

ILM-AC no foil technique tested and recommended for JUSTI-TONE. Write in for technique. Assures perfect separation.

ILM-AC, tin foil substitute, is a suspension. When sediment forms, hake thoroughly. FILM-AC does not age. CAUTION: Do not get bits f plaster or dirt into FILM-AC bottle as contamination will set in.

irect acrylic experiments progressing favorably. Write in for complete data. Involves accelerated polymer and monomer.

Justi-Tone

CERTIFIED TO MEET A.D.A. SPECIFICATIONS

S SOLD BY ALL LEADING SUPPLY HOUSES

★ ★ ★

TRIAL PACKAGE		WAR PACKAGE	
Units	$4.50	*12 Units	$22.50
1 Unit Standard tone, 1 Unit Light tone		Choice of Standard tone, Light tone or Clear	

*2 extra units of material — service boxes eliminated.

Justi-Tone

CERTIFIED TO MEET A.D.A. SPECIFICATIONS

"Experience is a sort of savings bank and pays annuities to old age." — IVOR BROWN

NO DENTAL manufacturer has had more years of experience in pigmenting the materials for Dentistry. With the advent of acrylics, the Justi Research Staff has given its full time to this subject. Experience plus Research has resulted in JUSTI-TONE.

There is probably more than one good denture base material; but, JUSTI-TONE'S unusual combination of translucence and opacity results in a "tissue-lucence" even when dry—a feature that particular dentists will like.

The Profession, Trade and Teaching Field look to Justi for excellence in plastic products—JUSTI-TONE is presented as a logical step in our goal of "Modern Products for Modern Prosthetics."

★ ★ ★

Data on Packing Acrylic Dentures is available on request.

Naturally distinctive - distinctively Natural

USTI *Products for Modern Prosthetics*

D. JUSTI & SON, INC., PHILADELPHIA, PA. — RELIABLE DENTAL PRODUCTS SINCE 1864

Dental Association and the chairman of the Committee on Legislation have gone before the War Department and the Surgeon General a number of times in an endeavor to get some of these problems settled. Only after a number of visits to the Department did we decide that only through legislation could we attain the desired ends. . . .

"We have been told that the Department will make promotions in the Dental Corps at the present time only for reasons of responsibility, and that it does not adhere to the principle of a ratio of dentistry to medicine or a definite number of appointments. It states that it is willing to make these appointments where we can show a definite responsibility. . . .

"Prior to October, 1942, dental standards for entrance into the Army were very high, but, after Pearl Harbor, the standards were lowered very materially, and many men whose mouths were in dire need of rehabilitation were taken into the army. In fact, out of the first million men who were inducted, there were 188,000 who were rejected because of dental defects, but later they were taken in and rehabilitated for the Army by the Dental Corps. This additional work was done by the Dental Corps, in addition to the usual amount of work of the Corps. . . .

"During the peak of the First World War, in 1917, there were 4,460 dental officers in the Army, and, during the peak six-month period, they made 4,000 dentures. At the present time, there are 12,000 dentists in the Army, and they are making 60,000 dentures a month and placing 1,500,000 fillings. Therefore, with a force which is less than three times as large as that during the previous war, they are making fifteen times as many dentures in one month as they made in six months during the other war; or ninety times as many dentures. This same proportion is also true of extractions, the care of facial injuries, fillings, etc. Certainly this shows a very highly increased efficiency. By making these 60,000 dentures a month, the Dental Corps is, by denture work alone for the Army, making available for military duty 60,000 men who would otherwise be lost to the Army.

"During the first World War, when the strength of the Army Dental Corps was 4,460, Congress was fit definitely to establish a ratio of parity between the Army Dental Corps and the Army Medical Corps at 1:6½ and this pertained to numbers, rank, grades, etc. In the present war, there is a personnel in the Army Dental Corps of almost 12,000 at the present time, as against 39,000 in the Medical Corps, or a ratio of 1:3½; yet there has not been a disposition on the part of the War Department up to the present time to give the Dental Corps, in the matters of rank and grade, especially in the top ranks, even the ratio of 1:6½, which it had during the last war; and this in the face of the fact that although it is only three times as large as in the previous war,

the Dental Corps is doing 90 times as much dental work as was done in that war. Notwithstanding the greatly increased efficiency and capacity of the present Dental Corps, there are now thirty-one brigadier generals in the Medical Corps and only one in the Dental Corps. This speaks for itself. . . .

"For more than fifteen years, the American Dental Association endeavored to get a rear admiral for Dentistry in the Naval Dental Corps; and always this action was blocked. During recent legislation, the War Department opposed this legislation with a statement that it was against the best interests of the Department, and for reasons that should be apparent to all were not well founded. In spite of the Department's attitude and opposition, the rank of rear admiral was established in the Dental Corps permanently and the bill carried provision for the appointment of temporary rear admirals in a relative proportion to that of medicine. In spite of the action of Congress and the signing of the bill by the President, there has been but one rear admiral appointed, and an appointment of rear admiral for dentistry has not been made for the central office of the Surgeon General. This would appear to be a definite discrimination, and the least that the Department could do with any thought of equality and a relative ratio would be to appoint a rear admiral as inspector on the West Coast, a rear admiral as inspector on the East Coast, a rear admiral in the central area and a rear admiral in the central office of the Surgeon General. This would give four rear admirals, three temporary and one permanent, to the dental service at the present time as against nineteen rear admirals for medicine. . . .

"In order to secure the rank of brigadier general for the Army Dental Corps, it was necessary to get legislation in opposition to the Department's attitude and over the protest of the Department. However, this legislation was enacted and it has proved a very valuable means of promoting the efficiency of the Dental Corps. The Department has seen the wisdom of this legislation. The law enacted was for their benefit, for the benefit of the Medical and the Dental Corps and for the benefit of the entire Army personnel. The Medical Corps of the Army states that it is now opposed to legislation for dental purposes. . . .

"The Surgeon General of the Army is responsible for the proper functioning of the Medical as well as the Dental Corps, and he should be favorable to any plan that would make for the greater efficiency of the Dental Corps, as this would reflect credit upon his office and be to the advantage of both the Medical and the Dental Corps. . . .

"Under the present Selective Service Act of 1940, through rulings, interpretations and memoranda, there have been only a few more than 200 dentists taken into the services as enlisted men and, of this number, 190 have been commissioned to date. In addition, the dental students of all the

dental schools and those men w
have signified their intention to stu
dentistry have been commissioned
they passed the physical examinatio
in the Navy as ensigns, or in the Ar
in the medical administrative cor
which means that they will be perm
ted to continue their dental educ
tion before being taken into the arm
forces as commissioned officers.

"The legislative committee of t
American Dental Association is n
fostering legislation for any reas
other than that apparently we are u
able to get the deserved increas
ranks, without actual legislation. W
are eager to see a spirit of cooper
tion between the Medical and t
Dental Corps, and medicine has eve
reason to foster this spirit. They ne
our support and cooperation as mu
as we need theirs.

"STERLING V. MEAD, *Chairman,*
Committee on Legislation

DENTAL MEETING
Dates

American Society of Oral Surgeo
and Exodontists, annual meeting, Ci
cinnati, Ohio, October 8-9.

•

Montreal Dental Club, nineteenth a
nual fall clinic, Mount Royal Hote
Montreal, October 20-21.

•

New York Society of Orthodontist
regular meeting, New York City, N
vember 8-9.

•

Ohio State Dental Society, annu
meeting, Cleveland, November 7-10.

•

Rhode Island Dental Society, annu
meeting, Providence, January, 1944.